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SELECTIONS

FROM THE

RECORDS OF THE GOVERNMENT OF INDIA,

HOME DEPARTMENT.

No. CCCXXXVII.

HOME DEPARTMENT SERIAL No. 19.

PAPERS

RELATING TO

VILLAGE SANITATION IN INDIA.

1888—1895.

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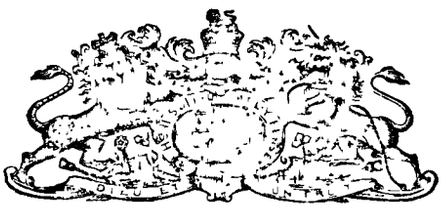

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SELECTIONS

FROM

PAPERS RELATING TO VILLAGE SANITATION IN INDIA, 1888—1895.

Extract from the Proceedings of the Government of India in the Home Department (Sanitary),— No. 3—212-225, under date Simla, the 27th July 1888. [No. 1.]

READ the undermentioned papers:—

Report of the Royal Commission on the Sanitary State of the Army in India, 1863.

Despatch from Her Majesty's Secretary of State for India, No. 83 (Statistics and Commerce), dated 2nd May 1878, forwarding, with remarks, a Memorandum by the Army Sanitary Commission on the Bengal Sanitary Report for the year 1876.

Home Department Circular letter to Local Governments and Administrations, Nos. 8—227-236, dated 7th August 1878, circulating the above Despatch and enclosed Memorandum.

Despatch from Her Majesty's Secretary of State for India, No. 58 (Statistics and Commerce), dated 24th April 1879, forwarding remarks by the Army Sanitary Commission, dated 19th March 1879, on the practical application of sanitary principles to towns and villages in India.

Resolution by the Government of India, in the Home, Revenue and Agricultural Departments Nos. 9—259-70, dated 7th July 1879, circulating, with remarks, the above Memorandum from the Army Sanitary Commission.

Despatch from Her Majesty's Secretary of State for India, No. 102, dated 15th October 1885, forwarding, with remarks, a Memorandum by the Army Sanitary Commission on the Bombay Sanitary Report for 1883.

READ also the following correspondence:—

Report on the District Boards in the Madras Presidency for the year 1885-86, with the orders of the Madras Government thereon.

Letter to the Government of Madras, No. 132, dated 24th September 1887.

Reports for 1886 from the Sanitary Commissioners in Madras, Bombay, Bengal, the North-Western Provinces and Oudh, the Central Provinces, Burma and Assam, with the orders of the Local Governments thereon.

Orders of the Government of India on the Reports of the Sanitary Commissioners enumerated above.

Reports for 1885-86 on the Administration of Municipalities in Bombay, Bengal, Burma, Assam and the Hyderabad Assigned Districts, with the reviews of each Local Government and Administration concerned.

Orders of the Government of India on the Municipal Reports enumerated above.

RESOLUTION.—The practical application of sanitary principles to towns and villages in India has, since the publication in 1863 of the Report of the Royal Commission on the Sanitary State of the Army in India, received the continuous attention of the Government. The Report of the Royal Commission, the reports submitted consequently from time to time by the various Provincial Sanitary Commissioners, and the suggestive reviews of those reports which have emanated from the Army Sanitary Commission in England, have brought to notice the chief sanitary defects of urban and rural areas, and have indicated the methods by which they might be remedied. It is through no want of sympathy with the cause of sanitary improvement that the Government of India has not been able hitherto to give as full effect to these recommendations as it could have wished. The difficulties to be overcome were numerous and formidable, and lay, to begin with, as much in the ignorance of the people and in the passive resistance offered by them to all departures from the practice of ages, as in the want of funds and the absence of an executive agency to give effect to the orders of the central authority. However convinced the Government of India might be of the value of the suggestions made for its adoption, and however anxious to carry them into effect, it had to proceed with circumspection, and with a due regard to the means at its disposal, as well as to the prejudices of the heterogeneous populations entrusted to its care. Under such circumstances progress has unavoidably been slow.

Still considerable progress has been made. The ignorance of the people on all sanitary questions has been in some measure mitigated by the Department of Public Education, which has imported into the ordinary school curriculum instruction in the elementary principles of sanitary science. Popular prejudices have been combated by the judicious influence of the officers of Government, and by the introduction of improved sanitary methods, wherever this was practicable. Sanitary Commissioners have been appointed in all Provinces; information regarding the sanitary needs of towns, and, later, of rural areas, has been collected; and in many municipalities and some rural areas this information has been turned to account in the provision of a pure water-supply, of improved drainage, and of better conservancy arrangements. The Government of India readily admits that what has been done in these directions may appear small in comparison with what remains to be done. But it does not admit that, having regard to the difficulties which lay in the way, reasonable progress has not been made.

2. It has been stated that the main obstacles which have hitherto impeded sanitary improvement in India lay in the ignorance of the masses and their dislike to any change of custom, in the want of efficient executive agencies, and last, though not least, in the want of funds. Upon the first of these obstacles, the Governor General in Council does not on the present occasion desire to dwell. It indeed still constitutes a formidable difficulty, upon which, in rural areas at all events, little sensible impression has yet been made, and its existence renders it necessary still to observe great caution in the introduction of sanitary reforms. But with the rapidly advancing tide of popular education, the perception of the beneficient intentions of the Government comes home more clearly to the people than it did; and there is less danger than there was that measures taken for the improvement of the health of the people and the prevention of disease should be misconstrued as arbitrary interference with time-honoured practices. If some years ago it was generally and correctly felt by Local Governments and Administrations that authoritatively to press the subject of sanitary improvement, especially in villages, would be of little avail, and that persuasion, not coercion, was the right plan to follow, it is no less generally felt to-day that a more forward, though still cautious and tentative, policy would now be opportune.

3. In considering therefore the measures most calculated to promote the cause of sanitary reform in India, attention should, in the first place, be directed to the question of executive agencies, and to the question of funds. Taking the question of executive agency first, it has to be regarded in its relation to urban and to rural areas. In relation to urban areas, the Governor General in Council is glad to think that the question now presents far less difficulty than it did. When sanitary reform in India received its first impetus from the investigations of the Royal Commission referred to in the preamble, there was, outside the Presidency towns, practically no organization for the prosecution of sanitary work. The hard-worked district officer did what he could to keep his towns clean; but sanitary science in India was then in its infancy, while the most enlightened inhabitants of Mofussil towns knew nothing about it, and never troubled themselves to learn anything. The result was manifest in the lamentable state of things depicted in the Report of the Royal Commission. Since then, however, there has been much improvement. The growth of the spirit of self-help and the perception of the advantages of sanitation in municipalities has in recent years been encouraging; and there is reason to think that the Government may, with increasing confidence, rely on the co-operation of municipal bodies in promoting sanitary reform. The Municipal Acts, which formerly were adapted to an early stage of civic development, have now been cast in an ampler mould. Those now in force in the various Provinces confer a larger discretion and authority to pass rules and bye-laws for sanitary purposes, and impose upon Municipal Committees the duty, as far as the funds at their disposal will permit, of providing, among other things, for the sanitation of the towns. Municipal Boards can, therefore, both entertain the requisite agency for carrying out the law, and raise the necessary funds. The areas to be dealt with are limited, and within them the interests of the people affected are mostly identical. There is a field for concentrated effort; and the Government may, therefore, with greater confidence look to Municipal Committees for active assistance in carrying into effect the measures of sanitary improvement declared to be necessary for the towns over which they preside.

4. In rural areas the case is different. Among the village population the sense of the need for sanitary reform is but little, if at all, more developed than it was when the Royal Commission reported a quarter of a century ago. The great feature of Indian rural life is immobility of custom, upon which novel ideas make but little impression. For improving the sanitation of villages executive rules have been from time to time framed and recommended for general adoption. It does not appear, however, that they were anywhere productive of much good, for there was no executive agency to supervise their working or, when necessary, enforce them.

But in this important matter of executive agency a great improvement has been effected by the District and Local Boards Acts passed by the Legislative Council of the Governor-General

and by the various local legislatures. In the Madras Presidency a gradation of rural Boards has been established, one of which deals with the village; another with the sub-division of a district; a third with the entire district. All these Boards have their special functions to discharge; but each has to provide within the area of its jurisdiction for the sanitation of towns and villages, and to that end is endowed with powers to entertain the necessary establishments. In Bengal and the Punjab the organization established, or to be established, is on the whole similar to that established in Madras; and though under the system introduced in Bombay, the North-Western Provinces and Central Provinces, a larger territorial unit of self-government has been adopted, there is no reason why the executive agencies should not act effectively throughout the larger areas. The various Acts of the Legislature, which create this system of local self-government, require the Boards to undertake, among other things, local works and measures likely to promote the health of the public within the area subject to their authority, and empower them to entertain establishments for that purpose. In some instances also the laws creating these bodies confer upon them limited powers of taxation. But when this is not the case, or when it may be inexpedient to resort to taxation, or when funds may be insufficient to meet the expenditure necessary for sanitary and other improvements, it is always open to the Boards, with the sanction of the Local Government, to have recourse to loans under Act XI of 1879 (The Local Authorities Loan Act).

This legislation has, therefore, provided the Government of India, for the first time, with the means of creating that agency for executing sanitary reform in rural areas without which its previous exertions proved comparatively fruitless. The agency, even in the Provinces in which it has been established, is as yet in its infancy; but year by year it will grow stronger and more efficient, and the Governor General in Council therefore desires to impress upon Local Governments that, from the beginning, the promotion of sanitation should be regarded as one of the most important duties of all District and Local Boards, and of Village Unions, where they exist.

5. In initiating and carrying approved sanitary measures into effect it will be always essential to enlist the assistance and co-operation of the district authorities, which indeed are always available to Municipalities and Local Boards. But it must be remembered that district officers, who have generally shown themselves forward in promoting sanitary improvements and in co-operating with Local Boards in these matters, have neither the time nor the technical knowledge nor the opportunities requisite for a comprehensive survey of the entire field of activity which is necessary for the discharge of the duties in question. Experience in India as well as in other countries has shown that, unless local executive agencies are carefully guided and controlled in sanitary matters, there is almost certain to be misdirection of energy and wasteful expenditure. As has been pertinently observed, "it is vain to hope that the numerous public bodies to which the sanitary administration of India has been committed will be found competent to discharge their important duties, so long as there is no competent authority possessing the necessary knowledge and armed with the necessary powers to assist their deliberations, guide their actions, and, when the occasion arises, correct their mistakes and remedy their inactivity." It therefore appears to the Government of India to be eminently desirable that there should be established in each Province a Sanitary Board through which the Local Government can operate, and to which, subject in all respects to the orders of the Local Government, shall be entrusted the control and supervision over sanitary works, whether undertaken in urban or rural areas. It was one of the recommendations of Lord Stanley's Commission, referred to in the preamble to this Resolution, that a Commission of Health should be appointed at the seat of each Local Government with purely consultative functions, to advise on all questions relating to sanitation. Something more than a consultative body is, in the opinion of His Excellency in Council, now required; and the Sanitary Boards which he wishes to create should therefore, from the outset, receive recognition, not only as a consultative body, but also as the executive agency through which the Government acts in the Sanitary Department.

These Sanitary Boards might be composed of an officer of approved administrative experience, the Sanitary Commissioner for the Province, and an officer of the Public Works Department skilled in sanitary engineering. With these three officers might be associated one or more non-official members appointed by the Local Government. Every Commissioner of Division in Northern India and Bombay, and possibly District Collectors in Madras, might also be *ex-officio* members of the Board when dealing with questions connected with their divisions or districts. It is probable that the duties of the Board would not, at all events for some time to come, be onerous, and could well be combined with the other and ordinary duties of the members.

Finally, it is desirable that the Provincial Sanitary Boards should, subject to the orders of the various Local Governments, be in constant communication with the Sanitary Commissioner with the Government of India, whose advice upon large schemes of sanitary reform will always

be useful, and who will be in a position to communicate to one Provincial Board the results of experience gained by another. The Sanitary Commissioner with the Government of India, who acts under the general instructions of the Home Department, will thus, so far as may be needed exercise the functions of a general co-ordinating and consultative authority; and through him the Government of India will be in a position to enforce, if necessary, that general control which it is competent to exercise over all branches of the administration. It may afterwards be necessary to associate with the Sanitary Commissioner an expert in sanitary engineering science; but this is a question which need not be raised in this place.

6. In orders issued by the Home Department on Municipal and Local Board Reports for 1885-86, cited in the preamble to this Resolution, the Governor General in Council took the opportunity of laying down the general lines on which, in his opinion, future action of local bodies should be directed in promoting sanitary reform. The principle which he had in view was, that action should be preceded by an accurate ascertainment of the requirements of each locality. Accordingly it was suggested to various Local Governments that a sanitary survey of each municipality and rural area should be undertaken with as little delay as possible, and that plans and estimates should be prepared of all the improvements necessary to provide each town or village with an efficient system of water-supply, drainage, and conservancy. The most important of these requirements, and that which, in the opinion of the Government of India, may at first be dealt with most effectively, and with the greatest chance of the active assistance and sympathy of the people, is the provision of pure water. Drainage,—especially in those localities in which the construction of public works, such as railways and canal embankments, have interfered with the natural flow of water, and may have injuriously affected the people's health,— is also a matter calling for early attention. But while thus indicating the directions in which sanitation can be best promoted, there is on the part of the Governor General in Council no desire to limit the discretion of Local and Provincial authorities as to their choice of action. That can best be determined by a knowledge of local requirements. In the orders in question it was added that plans, when once fixed, should be executed from year to year as funds become available, the object aimed at being persistently kept in view until it was completed. The Government of India desires in this place to call special attention to these instructions, which were devised with the view of checking wasteful recurring expenditure; and to express the hope that the annual Reports of the Administration of Municipalities and Local Boards in each Province will henceforward show that progress is being made in the desired direction.

Another important matter to which attention must here be called is the provision in every Province of simple rules for the regulation of village sanitation. In some Provinces such rules have been for some time in operation, though with no very beneficial result, while in others it is now in contemplation to render such rules more effectual by legislation. Wherever the existing law makes no provision, or insufficient provision, for the enforcement of necessary sanitary measures in rural areas, there should be no hesitation in taking the necessary power by legislation. And in this connection His Excellency in Council thinks it may be of advantage if the attention of all interested in sanitation is again called to the valuable remarks made in 1879 by the Army Sanitary Commission on the practical application of sanitary principles to towns and villages in India. Their remarks are, therefore, published as an Appendix to this Resolution.

7. Passing from the organization of the Sanitary Department to the important question of the provision of funds, it is, in the first place, to be observed that the various Municipal Acts enable the corporate bodies created by these Acts to raise by local taxation the funds necessary for local expenditure. Similar power is conferred on Local Boards by the Madras, Bengal, and Punjab Local Boards Acts, but apparently not elsewhere. It will be for the consideration of the Governments of Bombay and the North-Western Provinces and Oudh, which possess Legislative Councils, whether legislation should be undertaken with a view to confer powers of taxation upon Local Boards in those Provinces. Meanwhile it is incumbent on the Governments of the Provinces in question to place Local Boards in possession of funds sufficient to meet the reasonable requirements of local sanitation. But though sufficient money to meet current expenditure may be provided in these ways, it will probably be necessary to raise additional funds for the execution of new or large works. It is indeed probable that local income may be increased without any hardship to the tax-payers. In certain Provinces some productive methods of municipal taxation have not yet been turned to account: but even when all current revenue is taken into account, it may, and doubtless often will, be found necessary to have recourse to loans under Act XI of 1879, or to appeals to the Provincial or Imperial Governments for grants-in-aid of local resources.

With reference to loans, the Governor General in Council desires to say that, so long as borrowed money is not spent on the ordinary current operations of a Municipal or Local

Board,—so long as it is spent on works of lasting utility, there can, as a matter of principle, be no objection to imposing on the rate-payers of future years an obligation to subscribe. The Local Authorities Loan Act, XI of 1879, affords certain facilities for borrowing by public bodies; but the rates of interest at which these bodies can raise the loans in the open market are often so high as to be practically prohibitive. The Governor General in Council has, therefore, taken the subject of loans to local bodies into his careful consideration, being satisfied that no policy of sanitary reform in India can be successful unless facilities are provided for local bodies to raise funds for sanitary improvements on less onerous terms than they at present can do. The Government of India has not yet come to a final conclusion on this important subject; but it is not indisposed to think that, when expensive works of the kind in question have received the previous approval of Government, and when sufficient control over the local finances has been reserved to ensure the fulfilment of the conditions on which the raising of the loan is sanctioned, it might be expedient to authorize Local Governments, subject to certain prescribed limitations and conditions, to raise and establish a Provincial loan fund, and make its own bargains with local bodies in regard to advances necessary for sanitary improvements and other works of lasting utility. The question is one of general policy, which demands careful consideration; but the decision upon it will not now be long delayed.

8. With reference to the subject of contributions from Provincial funds for sanitary works of utility, His Excellency in Council has observed with satisfaction that a willingness has already been exhibited to contribute from Provincial resources in aid of sanitary improvements, both in urban and rural areas. Where the ability of local bodies to raise loans is undeveloped and their credit not established, the Government of India approves of such contributions, and would like to see regular provision made for them in Provincial budgets, when this can be done with a just regard to other demands on Local Governments. In some cases,—such, for instance, as obstructed drainage, incidentally referred to in paragraph 6 above, as resulting from great public works—contributions would be obviously appropriate. But if contributions are to take a definite place in the plan of Provincial finance, His Excellency in Council would be glad to see them systematized on the grant-in-aid principle, which has been found so effective in promoting education, care being taken to so regulate the distribution of the grants as to minimize the evils, inherent in the grant-in-aid system, of weakening local responsibility and fostering extravagance in expenditure.

Under the system indicated above, it will, it is hoped, be possible to meet from Local resources the money necessary for local sanitary improvements. There may, however, be very exceptional cases, the requirements of which cannot be met from Local or Provincial resources or by loans. In such rare cases the Government of India will not refuse to consider applications from Local Governments in the interests of sanitary improvements of more than local importance.

ORDER.—Ordered, that a copy of the above Resolution be forwarded to Local Governments and Administrations for information and guidance; that a copy be forwarded to the Department of Finance and Commerce, and to the Public Works Department for information; and that a copy be forwarded to the Sanitary Commissioner with the Government of India, for information.

Also that the Resolution be published in the *Gazette of India*.

I.

Practical Hints for the Sanitary Improvement of the smaller Municipal Towns in India.

1. In the larger cities and towns in India, employing their own Engineers and Officers of Health, the foundation of sanitary improvement must be laid in works of domestic sewerage and drainage, in water-supply brought from a distance, in surface levelling, paving and cleansing, and in surface drainage. These, together with opening up new thoroughfares, tree-planting, and improved house construction, where sufficient funds are available, will improve the general health, and mitigate or prevent outbreaks of epidemic disease in all the larger groups of population. They are not only the most effectual measures which can be adopted for these objects, but for large dense populations they are in the end the cheapest.

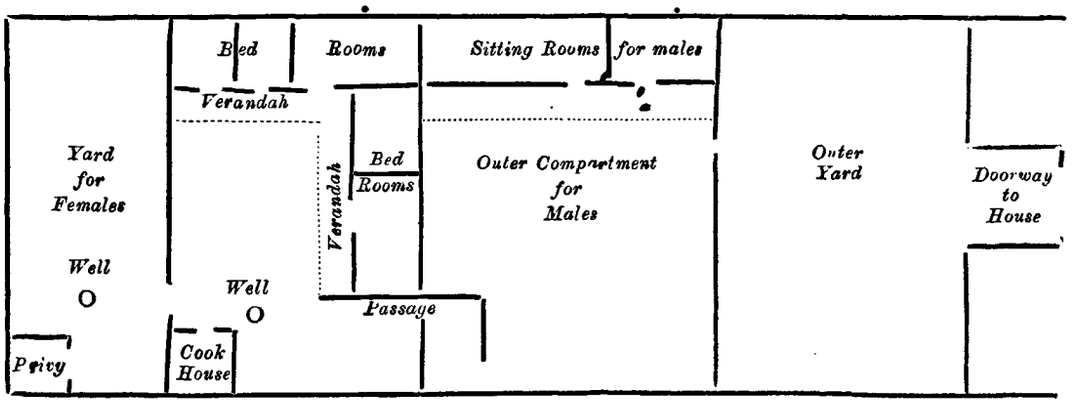
In the smaller municipalities the chief difficulty that lies in the way of adopting them is, that where there are a few thousand people, most of whom are of the poorer classes, funds are limited, and there is no local source from which the capital sums required for the execution of permanent works can be drawn, at least at present. Although public health measures, to be executed mainly by hand labour, may be more costly than the current outlay for permanent works, still much may be done among small populations by the proper application of limited income; and the object of the present paper is to point out, as far as it may be practicable to do so, the chief directions in which limited local expenditure may be applied to effect this object. But the nature and extent of legislative and administrative measures and authorities required to give

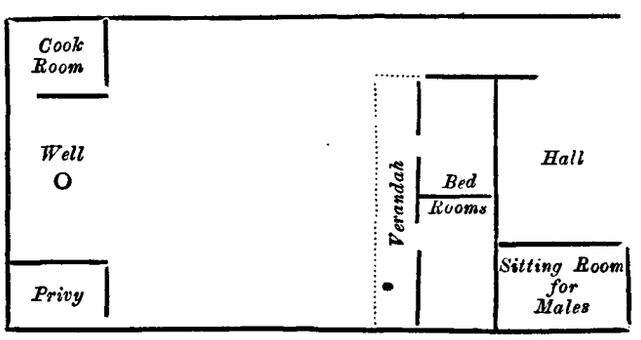
practical effect to the principles embodied in the following paragraphs, whether for small municipal towns or villages, must be left solely to the authorities in India.

2. In all municipalities the two primary means of preventing outbursts of disease are strict attention to domestic cleanliness, and the protection of water-sources.

There is every reason for suspecting that the chief disease causes in all Indian towns are to be found within the walls which enclose the compounds and houses.

Here are sketches of two classes of houses, taken from a Bengal report. The first of well-to-do people; the second is a middle-class house.



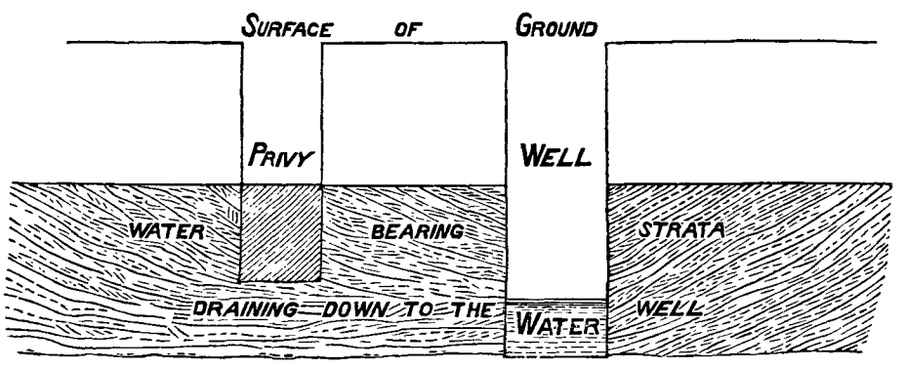


These houses, from being enclosed within walls, have no proper ventilation, and the rooms are so dark as sometimes to require a lamp, day and night.

In some parts of India it is the practice to cover in the entire courtyard, so that foul exhalations are prevented from escaping into the air. In such cases ventilation of the court as well as of the houses is required. The huts of the poor have generally no enclosure walls, and have one door to the hut; they have hence more light and air.

3. The privies in all these houses are described as being "made of wells in which the dirt accumulates for years."

The plans show that the water wells are dug in the same soil close to the privies, and this rough sketch shows the dangers to health arising from such an arrangement:



There cannot be a doubt that the well water under such circumstances is liable to constant pollution by infiltration of liquid filth from the privy, and also by foul surface washings from the yard, which is often in an exceedingly filthy state from the urine and dung of animals, as well as of human beings.

Where houses have been long inhabited, the whole ground within the court walls under the sleeping rooms, from which the well draws most of its water, is fouled, and the inhabitants are exposed to all the consequences of living on foul ground, breathing impure air, especially at night, and drinking unwholesome water.

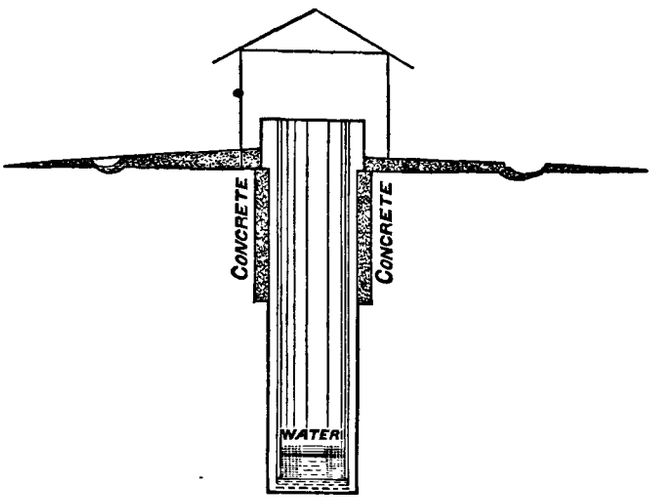
The simplest way of avoiding these dangers would be by rebuilding the houses on new ground, and adopting precautions to prevent the subsoil being polluted with filth. But as this cannot be done, the next best thing is to remedy the present evils as far as it may be practicable to do so.

4. The first step is obviously to prevent further pollution of the ground by cleansing and filling up all cesspits and filth wells. In many instances it would be advantageous to dig up and remove the surface earth of the compounds, and to replace it with fresh clear earth. Wherever means are available, the surface of the court or compound should be covered with paving, or some other hard impermeable material, such as rammed kunkur, and drained by channels to the streets outside.

Where a durable material for surface paving cannot be obtained, the most efficient substitute would probably be found in fresh clay hard rammed, so as to form a hard impervious surface, to be renewed by clean material at short intervals.

No cattle should ever be kept in small compounds. Besides the constant danger to health inseparable from this practice, it ensures rapid pollution of the subsoil, augments the difficulty of cleansing, and fouls the well water.

5. Where the cesspit has been close to the house well in the manner shewn in the plans, it would be better to fill the well up with clean earth, and dig another as far as possible from the site of the cesspit. All new wells should be cased outside with clay or cement, or with concrete, to a sufficient depth to cut off the surface and subsoil water from the well, in the manner shewn in the following section :



The well is dug and built up in the usual way, but when it comes within 8 or 10 feet of the surface, the tube must be coated outside with puddle or concrete, to cut off the upper portion of the water. The tube of the well should be carried two feet above the ground-level and covered with a roof ; the ground round the well should also be coated with concrete and sloped away from the well to open channels, as shown in the plan. With these precautions, which are not difficult to take, and not costly, any well within a compound, except in very foul ground, would yield wholesome water.

6. The abolition of well or cesspit privies being absolutely necessary before the water for domestic use can be safe, the only principle that can be adopted in their stead is that of continuous daily cleansing, and removal of all house filth and refuse of food, &c. The floor of the privy should be paved or covered with concrete or asphalte, and a moveable vessel placed upon it to be daily removed and emptied by sweepers, with or without the use of dry earth. There is absolutely no other safe plan except daily removal. If from any local cause daily removal cannot be carried out, then it may be suggested that the municipal authority should construct groups of privies with private keys for the use of families, and that all conveniences of the kind within private compounds should at the same time be abolished. The whole surface of the compound should be kept clean day by day.

7. As much of the fever from which the people suffer is due to sleeping on the ground, no greater improvement could be introduced by the municipality than inducing the people to use beds raised above the ground-level.

Were these simple improvements carried out in the smaller municipal towns, there would be considerable improvement in the public health, so far as the houses are concerned.

They may be summarized as follows :—

(1) Abolishing all cesspits and privy wells, filling them up with clean earth, and substituting for them vessels to be emptied daily, or public privies to be provided as suggested above ; all other privy arrangements to be improved in the same way, and everything removed daily.

(2) Removing all wells from the polluted ground near cesspits, and digging new wells as far as possible from them, on the principles already stated. Old wells to be filled up.

(3) Removing cattle from house compounds, improving the surface, and maintaining strict cleanliness.

(4) Raising all beds and sleeping places above the ground-level.

(5) Where people resort to the fields for natural purposes, provision should be made for immediately covering the deposits with fresh earth, and certain limits should be distinctly marked by posts, within which no inhabitant should be permitted to obey the calls of nature.

8. Wherever the municipality has been able to provide pure water, brought from a distance, it would be better to close all house wells, or to discourage their use. In this way the house problem would be simplified.

9. The next most important class of sanitary improvements are those required for the surface of the town outside the houses, and have for their object surface cleanliness, surface drainage, filling up and levelling all hollows and water holes not needed for supplying water for domestic purposes, or for bathing or for watering animals, and removing animals and unwholesome trades beyond the outskirts of the population.

10. It will be seen that every one of these objects can be attained without outlay of capital. All that is required is labour and a suitable direction of it.

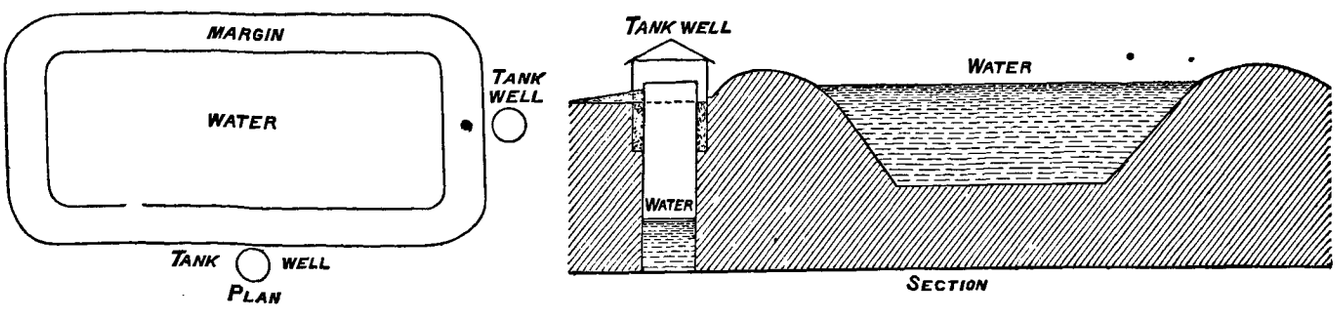
For instance, many municipal towns suffer in health from the presence in or near them of broken ground, holes with water in them, a larger number of tanks than is required for purposes of water-supply, using the same tank for drinking, bathing, washing, and watering animals.

Where such disease causes are present, the following rules should be applied :—

(1) All holes or inequalities should be filled up and levelled.

(2) No tank used for supplying domestic water should ever be used for bathing or for watering animals. The number of tanks required for all the purposes of the town should be carefully decided, and then all others should be filled up, and the land, which is often of considerable value, should be turned to use.

(3) The margins of all tanks should be carefully formed and paved, or covered with grass. Suitable places should be provided for drawing water, not directly from the tank, which should be considered as only the water reservoir, but connected with it, and made of masonry, as shown in the following sketch :—

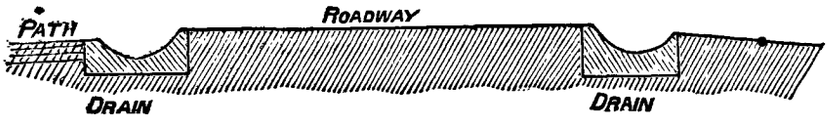


Wells sunk in clean ground at convenient places, and protected as already described, would supply tank water naturally filtered, and probably there would be no objection to draw the water by iron buckets, chain and windlass in a mixed community.

The municipality should take steps for the protection of all tanks and public wells. This is indeed one of their most important duties. There should always be a separate water-supply provided for low-caste people.

(4) At present the only kind of drainage suitable for small towns is open surface drainage, carried along lanes and streets to some convenient outlet.

All covered drains should be avoided. The surfaces of lanes and streets should be graded so as to allow rainwater to pass readily to the surface drain, and the drain should have a shallow water-tight section.



The material should be the best and cheapest to be obtained on the spot. Cut stone or concrete or asphalte might be used, or masonry or close-fitting vitrified brick; but in any case it is absolutely necessary that the channel should itself be laid true, have a sufficient fall, and that all the joints should be water-tight. Open cuts in the earth are of no use, but are, on the contrary, to be avoided, as leading to a damp unwholesome state of the subsoil.

(5) Where lanes or roadways have a considerable fall, the strong currents produced by tropical rains are apt to injure, or even to ruin, the side drains. This may be avoided by constructing the drains with steps, to break the current.

Surfaces of roads and lanes must, as everywhere, be made of the hardest and cheapest material available. The essential points in small town and village road formation are that the gradients should be properly laid out to drain the road to the side gutters, and that the surface should be carefully kept in repair. Little labour would be required for this purpose in comparison with the outlay necessary for reinstating the road after it has been half ruined by rain and traffic.

Shallow saucer-sectioned surface drains can be kept clean by sweeping, or by throwing water into them. With due care in cleansing with fresh water there would be no risk in allowing water, used by households for washing and bathing, to run into the surface drains.

The surface drains should discharge their contents into open impervious shallow surface sewers, by which the water could be conveyed to a distance from the town and used at once for irrigating land, and so be finally disposed of.

All household and town impurities are best made use of by being applied to agricultural purposes, and dung-heaps near the town should be avoided.

(6) The general health of small towns may be much improved by removing all useless jungle, by lopping the lower branches of trees so as to improve the external ventilation, and by planting trees on wet or damp ground within or near the town—a measure which dries the ground and purifies the air. Tree-planting along the public roads is also beneficial to health.

(7) Another general town improvement of much importance is the removal of all ruinous dwellings and levelling their sites.

(8) Any foul, unwholesome surfaces of ground within the town can readily be improved by covering the area with a few inches of clean earth, which is by far the best disinfectant to use.

11. As already stated, none of the measures proposed above need be expensive. All the materials and labour required are on the spot, and most of the work could be done by the inhabitants of houses themselves; and they ought to be required either to do what is necessary or to pay for the doing of it, on the well-understood principle that an unhealthy house is not only dangerous to its own inmates, but to its neighbours, and to the town generally.

If municipalities in small towns see that these measures are carried out to the greatest practicable extent with the means at their disposal, they may confidently expect improved health and less liability to epidemic diseases.

12. But when cholera or fever, or any other epidemic, attacks a town, another duty is placed on the municipal authorities. In a small population there ought to be no difficulty in discovering the houses in which there have been cases of cholera, fever, small-pox, &c., and whenever it comes to the knowledge of the municipal authorities that the inmates of particular houses have been attacked, immediate inquiry should be made into the sanitary state of the house. It is not safe, during epidemics, to stir up filth or foul ground, but there is one measure which can be taken with perfect safety—namely, to remove all animals out of the house or compound, and to cover all filth or foul ground, including cess-pits, with clean earth, and in every such case the house well should be closed and water brought from outside the town. These two measures, namely, providing good water, and covering all foul matter with earth, can always be adopted with safety and advantage during epidemics; and if any other measure be considered necessary, it ought to be the removal of the people away from the affected house. When the disease has abated, the municipal authorities should proceed to improve the house and compound, on the principles already mentioned.

II.

Sanitary Improvement of Villages.

13. There are four agencies by means of which village improvements can be carried out :—

(1) The inhabitants,—who ought to be called on to keep their houses, cattle, privies, wells, and village streets free from nuisance.

(2) The village officers,—who might be entrusted with powers to see these things done.

(3) The zamindar or village proprietor,—who ought to be called on to keep his property in a proper condition, especially as regards village work not immediately belonging to houses and compounds, such as the conservancy of village tanks, and the adjustment of their numbers to the wants of the population, filling up all useless collections of water, and all hollows in the ground, levelling the surface, removing ruinous huts, and surface-draining the village site, providing new wells, thinning jungle, etc., to improve the external ventilation. The zamindar should, in fact, see that all sanitary work is done which bears on the health of the village as a whole, as contra-distinguished from the steps necessary to keep the house and its appurtenances in a healthy condition.

(4) The Government,—whose sanitary duty in regard to village populations lies in the direction of general drainage works where these are of proved necessity for the district, and irrigation where water for agricultural purposes is deficient.

Village sanitary problems are so various, and are so much influenced by causes outside the houses, that it may be useful to state, as in the preceding paragraphs, the different agencies to be called into action, as these have been indicated in the many reports on this subject which have been received from India.

14. The village officer, where he exists, may help to remove the most important domestic causes of ill-health, which afflict the great mass of the people in India. He might take the following steps, and, in some way, authority might be given him for this purpose. He should see that all the village streets and lanes are kept clean and free of nuisance, that no filth or foul matter is thrown on the surface, and that no one is permitted to perform the offices of nature in any village street, lane, or open space.

He should set apart some area of ground to leeward of the houses to which all filth is to be taken. He should inform the inhabitants of it, and see that the ground is used for the purpose. He should set apart one or more open spaces to which people may resort for natural purposes, and every person should be required to cover up his own filth, or, where it can be done, a sweeper should be paid for the purpose, as has been done at Bijnor. The field used for this object should be cropped after it has been sufficiently manured, and another field set apart. All village filth and sweepings are useful for manure, and should be spread over land at the proper season.

Care should be taken that the ground set apart for these purposes is not near any well or tank, or water source from which drinking water is drawn.

The village officer might possibly be charged with oversight of the compounds and houses, or at all events he might call the attention of the people to the necessity for rigid cleanliness, and for removing cattle outside the compounds; some provision might be made for stalling them outside the village; but, at any rate, it would be far safer to have a cattle pen on some open ground within the village, than to keep cattle inside the houses. In such a case the village officer might enforce rigid cleanliness and removal of all manure outside the village. It would be advisable to follow the course which has been adopted in some parts of India,—namely, to put up boundary marks round villages within which no deposit of any kind of filth should be allowed.

It follows, from what has been said, that the most urgent sanitary improvement for Indian villages is one that need cost nothing. It is simply cleanliness, in which every inhabitant should lend his assistance; but in the case of those who would prefer to pay rather than to do their own cleansing, the expense would be very small.

15. Next in importance to cleanliness is the protection of water-sources; and a very simple rule of judging of the need of this can be applied by any one. It is this,—to examine the ground about the well or tank. If the ground is foul and filth-sodden, no well dug in it can yield good water, and no tank is safe unless the margins are raised to prevent surface filth being washed into the tank during the rains. If in any house or compound there is a cess-pit, together with a well or tank, both should be filled up. It may be taken for granted that the cess-pit has so fouled the subsoil, that no good water can be got from it; and besides this, no cess-pit or dung-heap should be permitted within the boundary of any house. Unless the inhabitants resort to the fields, the whole house filth should be removed daily in a portable vessel,

The safest course to take where wells are the source of the water supply, and where they have been dug in fouled ground, is to provide a new well; probably one for the whole village might be sufficient. It should be dug in clean ground, away from all nuisance. The subsoil water should be cut off from it by casing the well outside with concrete to a depth of 8 or 10 feet from the ground-level. The tube of the well should be raised two feet above the ground, and the surface should be sloped away from the well, and paved or covered with concrete, so as to carry away all waste water. Probably the best way of drawing water would be by a windlass and iron bucket and chain, and some kind of cover should be used to keep leaves out of the well. As already stated, there should be wells for low-caste people.

Where village water is obtained from tanks, it is most important to keep one tank solely for drinking and cooking water. It should be specially protected, and never used either for bathing, washing clothes, or watering animals. Tank water can always be filtered by digging a well at a short distance from the tank.

Improved water-supply for an entire village ought to be undertaken by the proprietor, because the people have not the means of doing the work.

16. It may be repeated here that the general measures required for the whole village, and which in default of other means should be done for the people by the zamindar, are village water-supply as described, surface improvements, such as levelling ground, filling up useless tanks and holes, surface drainage, removing jungle, removing ruinous huts, etc.

These improvements would cost very little in comparison to the gain in health among the people.

17. The measures in which Government might aid have been already stated, but it may be further suggested that the Vaccination Officers might be charged by Government with the duty of instructing both village officers and people in these matters. Civil Surgeons could also render efficient aid; and all should be done under the general supervision of the Sanitary Commissioner of the Government, who would also decide the precise nature of the responsibilities resting on the village proprietors.

19th March 1879.

[No. 2.]

From the Government of India, to the Right Honourable Viscount Cross, G.C.B., Her Majesty's Secretary of State for India,—No. 11, dated Simla, the 11th August 1888.

We have the honour to inform Your Lordship that our attention has been, for some time past, directed to the subject of sanitation in towns and villages in India. As Your Lordship is aware, the subject is one of admitted difficulty, and of very great importance. In reviewing the operations of the Local Boards, which exercise sanitary powers in the various provinces, we have allowed no suitable opportunity to pass without calling attention to the necessity for adopting plans of systematic sanitary improvement; but owing to various causes, we did not, until recently, find ourselves in a position to deal with the subject in a comprehensive or effective manner. In the Resolution, * of which we now transmit a copy for Your Lordship's information, we have indicated the measures most calculated to promote the cause of sanitary reform in India, and we trust that their adoption will in time lead to a material improvement in the public health of the country.

* No. 3—212-225, dated 27th July 1888.

[No. 3.]

From the Right Honourable Viscount Cross, G.C.B., Her Majesty's Secretary of State for India, to His Excellency the Most Honourable the Governor General of India in Council,—No. 2 (Statistics and Commerce), dated India Office, London, the 10th January 1889.

I have received and considered in Council your letter, dated 11th August 1888, No. 11 (Home, Sanitary), enclosing a copy of a Resolution of your Government on the general subject of the measures to be adopted for the promotion of sanitary reform in India.

2. I have read this Resolution with great interest, and have to express my entire approval of the principles and lines of action which it recommends.

3. It has been for many years past represented by the Army Sanitary Commission, and by other authorities, that, while a vast amount of work has been done in India in the collection of statistics, and in the investigation of disease causes, these measures have led to no great practical results, owing to the absence of any real executive authority in sanitary matters, and to the want of a systematic provision of funds for sanitary purposes, defects which it is specially necessary to remedy in a country where native sentiment is often arrayed against measures taken for the improvement of the public health.

4. I agree in the view of Your Excellency's Government that it is necessary to take vigorous and systematic action in the direction of sanitary improvement, and a draft Despatch upon the subject was under my consideration in Council, when I received intimation that you were taking action in the matter.

5. I forward, for the information of Your Excellency's Government, a Minute submitted to me by Colonel H. Yule, C.B., Member of the Council of India, on the subject of sanitation in India. Colonel Yule has for several years sat on the Army Sanitary Commission on behalf of the Secretary of State for India; his experience on that Commission, the interest he has always taken on the subject, and his knowledge of India, entitle his remarks to much respect, and I commend the Minute to the consideration of your Government and of your Sanitary Officers.

MINUTE BY COLONEL HENRY YULE, C.B.

[The paper which follows is substantially matter which was prepared more than a twelve-month ago, and laid before the Secretary of State in March last, with the intention that it should form the basis of a Despatch to the Government of India on the sanitary question. For various reasons a decision was delayed, and eventually the object of the intended Despatch was, in a considerable measure, anticipated by the Resolution of the Government of India of 27th July last.

But it is, I understand, the desire of the Secretary of State that the substance of the original papers submitted by the undersigned should be forwarded to the Government of India, and I now put it forward in a formal Minute. Some slight modifications have been made, bringing such statistics as are quoted down to a more recent date than was originally available.

H. Y.]

1. I have long had it on my mind that, in some form, the Government of India should be addressed on the sanitary question, with a general review of its position, and especially with regard to the sort of "thus far and no farther" to which we seem to have come for some time past.

In such a Despatch it would be desirable to review, so far as is possible within moderate limits, the present position of Sanitary Administration in India, as affecting both Her Majesty's Forces and the general population; to form some estimate of the degree in which that administration can be regarded as adequately discharging the duties of our Government in cherishing the health of its troops, in protecting the population from the ravages of epidemic disease, and, in raising the standard of public health; as well as to consider what steps are practicable, in order that those duties may be more effectually performed.

2. We shall see that the substantial character of the benefits to the Army, resulting from reforms that may be considered to date, with more or less precision, from the appointment of the Royal Commission of 1859, is happily quite beyond dispute. But we shall see also that whilst even in respect to the health of the Army there are considerable deductions to be made as regards the Civil population generally, though with admitted exceptions in the case of some of the larger municipal towns, little progress can be claimed, and a denial can hardly be given to the allegation of the existing Army Sanitary Committee that, though the Indian Sanitary Department furnishes much information as to the history of health, and a mass of valuable statistics, their reports are not followed by any serious amount of corresponding action, and the recurrence of extensive mortality from fever, and other endemic and epidemic diseases, is not materially impeded.

3. The Report of the Royal Commission of 1859, dated 19th May 1863, was intended to be forwarded to India with the Secretary of State's Military Despatch of 31st July, No. 280, followed by another (No. 297, of 15th August), in which the attention of the Government of India was drawn to the report at some length, and the most important of the Commission's recommendations were indicated for special consideration. These were:—

1. The appointment of a Sanitary Commission at each of the Presidencies.
2. A careful consideration of the changes which might be found necessary in the existing distribution of European troops.
3. Measures to be taken for the selection of new sites for barracks; in the construction of new barracks on approved principles; and in the application, so far as possible, of these principles to existing buildings.
4. The regulation of the diet of European troops, and the prevention, if possible, of the use by them of ardent spirits.
5. The provision of means for the innocent recreation and healthy occupation of the men.
6. Measures to be adopted to prevent the spread of venereal disease.

4. Owing to accident, copies of the Commission's Report did not reach Calcutta till January 1864. On the 5th February the Government of India reported their having directed the immediate formation of Sanitary Commissions in the three Presidency towns.

The Commission, as constituted in Calcutta, consisted of a Civil Officer (Mr. John Strachey) as President, with a Medical Officer as Secretary, along with a second Medical Officer and two Military Officers, one of them an Engineer, as additional Members. The President and Secretary were to devote their whole time to the Commission; the other three attended it, whilst retaining charge of other duties.

A general indication of the intentions of Government in constituting this new system of sanitary administration was addressed to the Commission.* In this it was pointed out that the full improvement of the health of the European troops which was hoped for could not be brought about by measures solely directed to the amelioration of the sanitary condition of the soldiers as such. No amount of care in Cantonments would be effectual if all sanitary precautions were neglected in the towns adjacent. A great system of sanitary administration could not be created in a day; but the Government looked for the gradual establishment of such a system throughout the country, which should be both comprehensive and uniform. Every step wisely taken towards the improvement of the public health would be a step towards higher civilization and better government. On the duties of the Sanitary Commission the Government quoted from the recommendation of the Royal Commission's Report, which ran that the Presidential Commissions should be—

* Military Department Letter of 29th February 1864, No. 1014.

"So constituted as to present the various elements, civil, military, engineering, sanitary, and medical;* *to give advice and assistance on all matters relating to the public health, such as selection of new stations and the sanitary improvement of existing stations and bazaars; to examine new plans for barracks and hospitals; to advise on the laying out of stations and bazaars, the sanitary improvement of Native towns, the prevention and mitigation of epidemic diseases, and generally to exercise a constant oversight on the sanitary condition of the population, European and Native; to report on the prevalence, causes, and means of preventing sickness and disease*; and further, that administrative measures should be adopted to give effect to the advice of the Presidency Commissions. (Also) that trained Medical Officers of Health should be appointed to act, in peace as in war, in connection with these Commissions."

* The words in italics are those actually quoted by the Government of India.

So far as local causes of disease required the construction of remedial works, the function of the Commission was to be consultative only. But in other cases, where the local causes required for their removal, not construction of works, but good administration and the proper carrying out of sanitary rules and regulations, the functions of the Commission would be administrative also.

All orders of the Government of India in respect to sanitary measures within the Bengal Presidency would issue in the usual manner through the Local Governments, but the Supreme Government would exercise through the Commission a general supervision and control over the whole sanitary service. Practically, the Commission would form a Department of Public Health, and the responsible administrative head of this Department would be the President.

The Commission would apply to the Local Governments upon all matters of sanitary interest, and make suggestions for the consideration of local authorities. But such suggestions would afford no authority for executive action or for expenditure. All civil and military authorities would be requested to afford the Commission every required assistance, and the Commander-in-Chief would be requested to give such orders as would ensure the Commission's receiving promptly from the local military authorities statistical and other information required.

The Commission was to draw up codes of rules adapted to the special sanitary requirements of the Army and of the Civil population, to be prepared in communication with the Sanitary Commissions of Madras and Bombay.

The practical work of *executive* sanitary administration would necessarily, as already stated, be carried out by the Local Governments, and by the local civil and military authorities. It would be the duty of the Commission, after careful consideration and communication with those authorities, to submit to the Government of India plans for carrying out and supervising the whole sanitary administration in the Bengal Presidency, making use, so far as possible, of existing establishments. The sanitary state of Calcutta was commended to the special notice of the Commission.

5. But the Commission had existed considerably less than two years when the Government of India, under Sir John Lawrence, recommended an entire change in its constitution, a change which, in fact, amounted practically to the abolition of the Commission and the substitution of a single Officer as Sanitary Commissioner, with a Medical Officer as Secretary.

The grounds on which this change was recommended will be found in Military letters of the Government of India of 21st October 1865 and 2nd June 1866. In February 1866 the

Government had taken the opportunity of Mr. Strachey's transfer to the Chief Commissionership of Oudh to carry out the change which they had proposed, and nominated to the position of Sanitary Commissioner an Officer who, it is believed, had given no previous attention whatever to sanitary questions.

It is not without purpose that these circumstances are here recapitulated, as well as the substance of the fundamental instructions given to the Bengal Commission. But it is unnecessary to continue the history.

6. It is well-known that the Royal Commission, in their Report of May 1863, calculated the average death-rate of the European soldiery in India, previous to the period of their own formation, at 69 per *mille*, a figure which gave rise to some keen controversy at the time, as to its fairly representing the normal condition of the troops during the years then recent; a controversy which need not be revived.

But the Commission then also recorded their opinion that the experience of the Civil Service, of the Military Officers with that of their wives and children, of the English troops themselves at any stations, and of the Native troops, proved that in the then existing state of India, the mortality of the English troops could be reduced to 20 per *mille*;* whilst a hope might be cherished that if the time should ever arrive when India should be freed from the general prevalence of malaria due to local causes, the mortality would come down to one-half of the rate just named.

* Original Report p. xxix, and p. lxxxi-lxxxii.

The first anticipation has been justified and much more than justified. The decade 1870-79 afforded a mean annual death-rate of 19·34, therefore distinctly below that indicated as attainable in existing circumstances; and later reports show a stride towards that lower rate, once anticipated only as a distant possibility, in case of a general improvement in the conditions of the country.

Thus, in the Report for 1886, which is the last which has been received from India, I find the death-rate for that and the three preceding years to be as stated in the margin, affording for those four years a mean rate of 13·3. And though the rate for 1886 is greater than that for the three preceding years, its value is enhanced by the fact that the ratio of invaliding (21 per *mille*) was unprecedentedly low, so that the *combined* loss from death and invaliding stands in 1886 at 36 per *mille*, considerably below that of any former year.

	Death rates. per *mille*.
1883	10·88
1884	12·56
1885	14·55
1886	15·18

Satisfactory as this result is, we must not disregard some aspects of the health of the European force which are less favourable, indicating as they do that evils of a powerful kind have yet to be effectually dealt with. Thus the ratios of *admissions to hospital* as of *daily sick* are considerably higher than they were, as a mean, in the decade 1870-79, or in any one year since 1881, and they are, indeed, but little below those of 1878 and of those immediately following years, when widespread and long-continued famine had so injuriously affected a large part of India, and when the employment of a large force in Afghanistan had placed so considerable a part of the European Army under conditions exceptionally unfavourable.

The increase in the ratio of *admissions* may possibly be due in part to greater attention being now given to ailments which were formerly disregarded; but it is more likely to be connected with the increased proportion of young soldiers, due to recent changes in the conditions of service. In any case it is unsatisfactory to find that notwithstanding the constant efforts made to guard their health, the annual admissions to hospitals in India amount to 150 per cent. on the numerical strength of the European Army; and that 71 out of 1,000 men are always sick.

7. Such ratios render it imperative on those who are responsible for the health of the Army to spare no effort, whether in discovering the causes of so great an amount of illness, or in removing or mitigating these causes when ascertained.

As regards some particular forms of disease, the statistics do not favour the belief that material improvement in the conditions affecting their prevalence has been effected. The ratio of deaths from enteric fever is shown to be on the rise in each of the three Armies, and in some parts of India intermittent fever would appear (unless the apparent increase be due to altered nomenclature) to have seriously increased of late years. In

	Enteric Fever, Death-rate per *mille*.		
	Bengal.	Madras.	Bombay.
1870–79	2·28	1·42	1·75
1886	5·70	3·85	4·16

	Intermittent Fever, Admission rate per *mille*.			
	1860—69.	1870—79.	1884.	1885.
Gangetic Provinces .	269	181	268	382
Meerut and Rohilkund Dewar . . .	249	433	991	1,289

	All Fevers, Death-rate per *mille*.		
	Bengal.	Madras.	Bombay.
1870-79	4·02	2 04	2·89
1886	6·69	4·74	4·43

any case the death-rates from all forms of fever were greatly larger in 1886, in each of the three Presidencies, than the mean rate of the decade 1870-79. As one-third of the entire mortality of the Army is due to diseases of this nature, their persistent prevalence and increase cannot but be regarded with anxiety, and no stone should be left unturned in the investigation of the causes of this great evil.

In regard to this matter also it is possible that the increase is in some measure attributable to the larger proportion of the force which is now constituted by young soldiers. But, if this be so, the duty is none the less imperative that we should ascertain and mitigate the causes which act unfavourably on a class which, from its physical circumstances, is especially liable to injurious influences.

"A young army," the Army Sanitary Committee observes, "involves, as one of its conditions of service, the most rigid attention to every sanitary requirement. The necessity of thorough ventilation, good drainage, dry barracks, the effectual removal of all surface filth, and the improvement of localities by subsoil drainage, has for long been universally admitted; but it is questionable whether there is not room in almost all branches for the more thorough and systematic recognition of their important bearing on the health of a regiment."

8. Diet is necessarily an important element as regards the health of the soldier. On a strong representation from the Army Sanitary Committee this was the subject of special investigation in 1883—85.* The Government of India sent home, as the result of extensive inquiry among Medical and Commanding Officers, the opinion of the Commander-in-Chief, Sir Donald Stewart, that no action on the part of the Government was required, and this was communicated to the Army Sanitary Committee. The latter body, however, return to the subject in a recent Memorandum, † in dealing with the subject of enteric fever:—

* Military letter No. 233 of 9th December 1884. See also No. 127 of 7th August 1885.

† Memorandum of the Army Sanitary Committee on the Report of the Sanitary Commissioner with the Government of India for 1885.

"Pointed attention was . . . called by the Royal Commission of 1859, and frequently since then by ourselves, to the whole question of dietary, with a view to its being arranged more in conformity with the ages and peculiar conditions of Indian service. Quite recently, indeed, the present dietetic system has been assigned, by an experienced Medical Officer, as predisposing cause of enteric fever."

On referring back to the correspondence of 1883—1885 it will be seen that, though there was a great difference of opinion among the authorities consulted, a large majority considered the present system unobjectionable, and the then Secretary of State, though (it would appear) not without hesitation, acquiesced, and did not again address the Government of India on the subject. It was, however, admitted generally, and expressed by His Excellency Sir Donald Stewart, that the mutton-ration of the soldiers was poor in quality, and the Government of India stated that they had directed the attention of the Commissary General to this point.

Again, I find, among the papers connected with this subject, extract from a Resolution of the Government of Bombay ‡ in the Military Department, which appears to me to contain excellent good sense, though rather strongly expressed. In this it is mentioned that the sanction of the Government of India had then been obtained to the "issue of a free ration of cocoa to men "quartered in the Ghorpuri barracks, before going on parade in early morning, or on sentry after midnight, as an experiment." I have not found any record of the result of this experiment, which *primâ facie* strongly commends itself for adoption. In the Return of Reports on the subject of diet and daily meals from upwards of 100 Officers, which accompanied the India Government's letter of 7th August 1885, above quoted, I can find no one instance of cocoa being supplied.

‡ No. 760, dated 9th February 1881.

9. Another point of the highest importance is noticed in the same series of papers by the Surgeon General of Her Majesty's Forces at Bombay under the head of "*Clothing and Bedding.*" "It would be a great advantage were proper arrangements in force to allow of the

soldier having a change of clothes when he comes in heated from parade or exercise. As a rule he sits or lies in the breeze till his clothes are dry, and thus often lays the foundation of an attack of illness."

This point was also dwelt upon by the Government of Bombay in the Resolution No. 760, dated 9th February 1881, just quoted. It would be well to know if a recommendation, so obviously calling for attention, has been followed up, and become a rule in India.

I may observe, in passing, that in the Bombay Presidency, generally, it appears to me that the largest general progress in sanitary work has been effected.

10. Another matter which calls for attention is the degree in which the health of troops is affected by the local conditions of the country in which they are stationed, and of the population by which they are surrounded. The same circumstances which operate prejudicially upon the inhabitants generally can scarcely fail to exercise an unfavourable influence upon the troops, though in a less pronounced degree. A striking instance is afforded by the case of Lucknow, where the fever death-rate of European troops for 1885 is especially high, *viz.*, 4·7 per *mille*. This fact derives significance from the high rates of fever mortality in the vicinity, *viz.*, 29 per *mille* in the city, 26 per *mille* in the district. It is improbable that any amount of precaution can secure for troops, who are stationed in unhealthy localities, immunity from the pernicious influences. Where, therefore, it is necessary to keep a force at any particular spot subject to such influences, it is required in the interest of the garrison, even apart from that of the general population, to improve the drainage and general sanitation of the surrounding country as much as possible. This subject will require further notice.

11. There is another matter which has from time to time already engaged the attention of the Government, and which has assumed increased importance owing to the larger number of young men now in the ranks of the Army, I mean the practicability of locating larger numbers of troops at hill stations, whilst endeavouring by all means to secure the most beneficial result from that location.

It is satisfactory to see the advance that has been made in this measure. The percentages of the whole force of European soldiers resident in the hills during the three last hot seasons, and of their women and children during the last two, were as follows:—

	Men.	Women.	Children.
1885	27·00	No percentage available.	
1886	28·85	37·57	43·32
1887	31·23	43·01	46·55

There can be no doubt that the condition of troops at a hill station, where due provision is made for sanitation, is superior as regards health, vigour, and efficiency to that of troops which pass the hot season in the plains, and while the changed character of the Army as to age renders location in the hills more desirable than ever, the progress in railway construction renders it more feasible.

In 1886 the death-rate of men quartered in the hills was unusually high for the locality (10·2 per *mille*), though considerably below the general death-rate of the European force in Bengal (15·52).

Many of the deaths constituting this rate were doubtless the consequence of disease contracted in the plains; but it is very questionable whether all that is practicable has been done to remove the cause of disease at hill stations. I observe that, out of 5,455 men of the Bengal Force at such stations, there were no less than 169 cases of enteric fever and 32 deaths from that disease, giving rates respectively of 31·0 and 5·87 per *mille*. Such rates suggest the probability of some sanitary defect in conservancy or water-supply. Hill stations are specially liable to pollutions of soil or of water supply; and we must not spare pains to remedy these evils at places which we maintained as sanitaria.

12. I must now refer to one of the most serious and perplexing subjects of all that touch the health of our European force and its efficiency,—that of venereal diseases. There is no need to enter into particulars on this matter at present, for orders have been issued for the rescission of the Contagious Diseases Act.

An able and laborious paper on this subject has been written by Mr. Barclay, Secretary to the Sanitary Commissioner with the Government of India.

The most powerful argument for the suspension of 1884 was drawn from the general fact on the face of the statistics that, in spite of the existence of the Act, the rates of admission for diseases of this nature had during the operation of the Act, as a whole, instead of descending,

risen greatly. Those who were satisfied that the Act should be maintained, in face of the very considerable and respectable body of opinion and sentiment which denounced it, found themselves in great measure disarmed by such statistics. It could hardly, indeed, be urged seriously that the effect of the Act was to increase the prevalence of the diseases. But Dr. Barclay has done much to clear up the anomaly, by producing evidence that the tide of increase has been due to causes which have, in fact, overborne and swamped the considerable measure of mitigation which the steps taken under the Act had at last produced. I need not make further reference to the subject now for the reason already given. I will only say that nothing affecting the health of the troops calls more urgently than this for action, if beneficial action can be suggested. The immense proportions of the evil must greatly affect the efficiency of the troops, whilst its nature is degrading to their character. No duty can be more incumbent, whilst I fear none is more difficult, than that of abating this mischief.

There seems no question that the influence on this matter of permission for marriage, on the larger scale formerly prevalent, acted for good indirectly as well as directly. At the time of the Royal Commission of 1859—1863, the question of augmenting the ratio of permitted marriages, even as it then stood, was much discussed. Most unfortunately, the change which has since taken place in terms of service has led to reduction instead of augmentation in that ratio, and it is difficult to see how an opposite course could be taken under a system of short service.

The remarks of the Royal Commission, in their Report of 1863,* are as applicable now as they were then, only that after a quarter of a century's experience, instead of being in a better position, we seem to be in a worse. Outside of the question of Acts and Regulations, no endeavour promising any influence in mitigation of this great evil should be neglected. Such are the ample provision of occupation more or less vigorous, and of amusement for the soldier's hours of leisure; voluntary classes in gymnastics, such as are enthusiastically adopted by the men elsewhere; gardening *when practised by the men with their own hands*; the endeavour to introduce some recreations of a refining and elevating tendency: encouragement to abstinence from strong drink: the endeavour to bring to bear the influence of commanding officers; the greatest care in selection of school-masters, and of such chaplains at military stations as seem to have really the character and ability to gain influence over the soldier. It is satisfactory to see the Government of India's Military letter No. 219, of 29th November 1887, regarding the provision of better regimental accommodation for recreation and refreshments, with its enclosures. The latter are full of valuable suggestions; and one is glad to see the proposal to abolish for the future the daily dram, as well as the general consensus of opinion in favour of temperance societies in the army.

*P. lxii.

13. Improvement in the health of the wives and children of soldiers has also kept pace with that of the men themselves. The death-rate of children is, however, still higher than it ought to be, and attention should be directed to the determination and mitigation of the causes. Every suggestion tending to facilitate the stay of children in the hills should receive favourable consideration.

In the Native Army the ratio of admissions and daily sick is less than in the European force. The death-rate, however (19·46 for the year 1886), must be regarded as high when we consider the age and circumstances of the class in question, and it suggests the existence of unfavourable hygienic conditions. Such conditions are probably to be found in undrained subsoils, bad hut accommodation, insufficient ventilation, unsuitable clothing, &c. There are, probably, few Native stations in which there is not room for improvement in some of these particulars.

14. The high rates of mortality in certain Indian jails have often been the subject of unfavourable comment; and I regret to observe that in some of the Bengal jails these high rates continued during 1885 and 1886, † indicating the active presence of unhealthy conditions. In the case of Rajshai, cholera contributed in the year 1885 a ratio of 21 per *mille* to the general mortality, but in this case and others the abnormal unhealthiness is explained by such well-recognized and familiar causes as bad drainage, within and without, subsoil soakage, inferior water, over-crowding, defective ventilation, marshy exhalations, the vicinity of low wet land, and the like. The bad water at Delhi is mentioned as contributing to the unhealthiness of the jail, as it does, no doubt, to that of the troops. Though there have undoubtedly been cases in which the origin of an excessive mortality in jails has been difficult to trace, the general causes of the prevalence of disease in jails are now well known, and there should rarely be difficulty or delay in

	Deaths in some Bengal jails per *mille*.	
	1885.	1886.
† Jalpaiguri . . .	170	65
Dinagepore . . .	151	127
Rungpore . . .	116	61
Rajshai . . .	163	90

their removal. The results which may be obtained by judicious action are shown in the case of the Madras jails, which present a mortality less than half that of Bengal jails.‡ Indeed, one jail, that of Salem, with 399 inmates, shows the extraordinarily small mortality of 2·52 per *mille*. Such rates are probably not attainable in other parts of the country, and among populations less robust; but the difference is remarkable, and might with advantage be investigated with reference to the rate in Bengal. Such a phenomenon as a mortality of 170 per *mille* (which occurs at Jalpaiguri) must be *primâ facie* discreditable to prison administration, and ought to provoke thorough investigation, with the determination to remove the causes of such an intense condition of unhealthiness.

	Death-rates per *mille*.	
	1885	1880.
‡ Bengal jails . .	38	32
Madras „ . .	17	17
Bombay „ . .	33	30

15. Let us now turn to questions affecting the sanitary condition of the general population.

In reviewing sanitary questions affecting the general population, some doubts necessarily arise as to the accuracy of registration, especially when note is taken of the wide range of diversity in provincial and district rates. Five millions of deaths were registered among the 197½ millions of Indian population under registration in 1885, and if we take account of the considerable addition which must be made to this return for unregistered deaths, the probability is that the mortality of India is not much less than double that of England. The questions arise, (1) how far this is due to causes which it is within human competence to remove; and (2) whether being within such competence, it is practically within the power of our administration to remove or largely to mitigate them.

Much of the Indian mortality is, it may be conceded, attributable to climatic circumstances: in some tracts to great variations of the temperature, hot days alternating at certain seasons with cold nights; in some to the exposure of enormous areas emerging from flood, or to a saturation of soil, conditions well calculated to affect unfavourably a population poor in resources, and little able to fortify itself against any external influence. The inhabitants of a country so circumstanced, earning a bare subsistence by agricultural toil, will certainly be subject to much disease and to a high mortality. On the other hand the people of India are, to a large degree, exempt from the classes of diseases to which hard winters, overcrowding, overwork, drunkenness, and destitution give rise in this country. As a matter of fact, the health of the population, when measures of sanitation such as have now become usual in England are carried out, has usually become very much the same as in England. The facts regarding the Army, European and Native, which have been cited in former parts of this paper, afford examples of what sanitation will do in checking disease and death. The parts of Calcutta which have been supplied with proper drainage and pure water have a lower death-rate than London. Diseases which once produced a rate of mortality the blame of which was laid chiefly upon climate, has been shown by the greatly improved health of the educated Anglo-Indian population to have been really a matter most largely dependent on evil personal habits and evil sanitary conditions. Such facts make it difficult to doubt that a great proportion of the disease and mortality of India is due to causes which are largely mitigable by human effort, if we can bring it to bear.

16. The Army Sanitary Committee, quoting the statistical aggregate of deaths and the diseases to which they are ascribed, observe (Blue Book, "Report on Sanitary Measures," &c., vol. xix, p. 166) :—

"We learn from this table* that above 78 per cent. of the entire registered mortality was due to mitigable or preventible diseases, and, moreover, that the sanitary problem in India is precisely what it has always been, namely, the executive removal of epidemic and endemic local disease causes, ... towards the extirpation of which" (they proceed a little farther on) "every civilised country has been labouring in past times, with the result stated in the Report of the Royal Commission (of 1883), that 'whole regions of the earth which were formerly devastated by fevers, pestilences, and dysenteries have long since been free from them, except in the milder forms in which they now occasion part of the ordinary mortality.'"

Diseases.	Total registered Deaths in 1885.
* 1. Cholera	385,928
2. Small-pox	80,630
3. Fevers	3,336,239
4. Bowel complaints . . .	293,638
5. Injuries	83,262
6. All other causes . . .	937,903
	5,117,600
Total of the first four diseases	4,096,435

During the last ten years—they go on to point out—an aggregate of some 38 millions has

been carried off in India by diseases of this class (as shown in the margin), whilst, it must be remembered, every one of these deaths represents numerous cases of sickness, and, on a low calculation, the fever deaths would represent, in fever-attacks during the decade, the entire population of India several times over, besides all the loss of working power which fever-attacks entail.

Epidemics.	Deaths.
Cholera	3,233,374
Small-pox	1,655,848
Fevers	30,205,020
Bowel complaints	2,962,432
	38,056,674

17. What, then, are the particular insanitary conditions which present themselves in India as fostering epidemic diseases? and what is the administrative action directed towards their removal or alleviation which is within the power of Government? The first question is much more easily answered than the second.

The insanitary conditions may be summarized as (1) impure water-supply; (2) imperfect removal of filth and polluted surface; (3) a subsoil either polluted by the continual infiltration of surface impurities, or saturated with moisture and unrelieved by drainage.

These conditions may be said to prevail almost everywhere, except in cantonments and in a few great cities where large engineering projects have recently been carried out. The municipalities generally have made some efforts towards improved conservancy, but, even had their efforts been more general and more successful than I imagine to be the case, they represent but a fraction of the population.

With regard neither to the municipalities nor to the rural population can our administration, I think, allow the present state of things to continue without a well-considered effort seriously to combat its mischiefs.

On this point we are assured of the concurrence of the Government of India. In commenting on the Sanitary Reports of the Bengal and Madras Governments for 1885, they express the opinion that the time has now come for the prosecution of sanitary measures on a more systematic plan than has hitherto been adopted as a rule.* It is pointed out that recent legislation has endowed local bodies with very considerable powers for the sanitary improvement of towns and villages and has placed at their disposal considerable sums for expenditure on that object; that it is of the utmost importance that the money thus rendered available should be laid out to the best advantage on well-devised schemes of permanent utility, and, with a view to this, it is suggested that a sanitary survey of each municipality in the provinces should, with as little delay as possible, be undertaken by the Sanitary Commissioners and by the local engineering authorities, that plans and estimates should be prepared of all improvements necessary to provide each town with an efficient system of drainage, water-supply, and conservancy, and that the plans so fixed should be executed from year to year as funds become available, the object aimed at being persistently kept in view till it is completed; the Government of India meanwhile being kept informed of the progress made from year to year in carrying out the policy thus recommended for adoption.

* Proceedings of the Government of India in the Home Department for July 1887, Municipalities.

18. No doubt the instructions given above are far in advance of the general feeling and knowledge prevalent in most municipalities on the subject of sanitation. To take the case of the Madras municipalities, for instance, it may be observed that, out of a municipal expenditure of 15½ lacs, "the expenditure on drainage works amounted to Rs. 19,853, and that on improvement of the water-supply to Rs. 40,091 only. Drainage operations were confined to the municipalities of Coconada, Madura and Tinnevelly, and the Committees appear to have generally failed to adopt regular and comprehensive schemes for the improvement of the drainage and the supply of good water."

To take another instance, we see that in the Central Provinces the neglect of municipalities to pay attention to sanitary matters, to exercise supervision, and to enforce rules, has attracted the unfavourable notice of the Government of India. Evidence to like effect might be supplied from the proceedings in other provinces. The sums devoted to conservancy and structural improvements are in almost every instance so inconsiderable as to show that next to nothing is being attemped.

19. On the whole, whilst there can be no question of the necessity of the sanitary surveys which the Government of India proposes, it must be doubtful if much practical result can be expected, until two needful matters are provided, *viz.*, (1) the advice and aid of experts; (2) greater facility in procuring funds for the objects desired.

(1) As to advice and aid from experts. Constructive measures of sanitation, as of drainage (both surface and subsoil) and water-supply, frequently present very serious difficulties and involve, for successful execution, much skill, knowledge, and experience. In this country very large amounts have every year, for the last quarter century, been laid out in undertakings of

this nature, and there has grown up a class of experts, possessed of high professional qualifications, varied experience and familiarity with every detail of such projects. Even in England, however, differences of opinion still exist among professional engineers as to the manner in which filth of towns and their surface and subsoil water can be best removed. In India there is, I apprehend, very little of such experience, and no class of engineers who can be said to have scientific acquaintance with sanitary practice. Moreover, the conditions differ so widely from those which prevail in this country that no unmodified copy of English practice will suffice to meet the problems which frequently demand solution. Great expenditure would be wasted, if local bodies were stimulated or permitted to embark on projects of improvement which had not been thoroughly well considered by engineers possessed of a well-grounded knowledge of the principles of such works and a large practical experience in their execution. When, therefore, orders are given for the making of sanitary surveys, and for working out the remedial measures which such a survey shall show to be necessary, it becomes essential that there should be some authority within reach possessing the necessary qualifications for giving advice that carries weight, able to frame projects when required, and competent to guard public bodies from wasteful or mischievous mistakes.

It can scarcely be said, I apprehend, that any such authority does now exist in India. The Sanitary Commissioners have, as medical men, no professional acquaintance with engineering; the local engineers may or may not have had any experience of this branch of work, and in any case only very exceptionally.

On such grounds one is disposed to regret that the nucleus of a consultative Sanitary Commission and Board of Health, such as was set up in 1864, was allowed so speedily to be abolished. It may or may not have been a very efficient instrument during its short life, but it is difficult to believe that, if it had continued to exist, and under the presidency of a gentleman of the ability and knowledge of its first head, it would not have developed into a valuable and progressive agency, which by this time would have left a deep mark in the sanitary improvement of the country.

20. I should hesitate, however, in spite of the advantage that might be anticipated from a judiciously formed body of experts, to urge upon the Government the reconstitution of a Commission (rather of Commissions) of the nature referred to, especially as their cost would trench somewhat largely upon the funds that may be available for executive improvement. But it may be gravely doubted whether the various public bodies, on which the sanitary improvement of India so largely devolves, will be found competent to carry out such important sanitary measures as are contemplated, unless there be at least available in each of the Presidencies and greater provinces, for advice, direction, and review, an Engineer of recognized experience in this especial branch of work. Without such an authority at hand, it would most certainly be necessary that projects of any considerable importance for the supply of water and for town-sewage should be sent home for submission there to a Consulting Engineer of experience and reputation; a course which would involve, possibly, great delay, and very probably a large and unprofitable expenditure of labour and money, in the preparation of projects eventually condemned as unsuitable.

Necessarily a Consulting Sanitary Engineer, employed as has been suggested, should be at liberty to visit and inspect personally the sites of proposed improvements of importance; but he would no doubt be able likewise to employ Assistant Engineers, of ordinary training, under his instructions, to report on local projects, and to work out their details.

21. Let us turn now to the second essential point which has been named, and which presents greater preliminary difficulties, I mean the provision of funds.

The pressure upon the Provincial Governments, and upon all local bodies, for funds to meet various important demands, is no doubt at this time severe.

As regards the provision of funds to municipalities having such work to carry out, it may be observed that the Act XI of 1879 appears to have marked a change of policy in respect to the grant of loans from Government to local bodies; and this practice has, I understand, been, since then, for the most part, discontinued, though it is not clear, on the comparison of that Act with the Act XXIII of 1871, which it superseded, why that should have been a necessary consequence. I understand, however, that the practical result has been to throw municipalities desirous to borrow for works of improvement, upon the open Indian money-market, and that serious difficulties are experienced by such bodies in raising loans at all, even in cases where their credit may be regarded as good. The Calcutta municipality, for instance, has, I see, been considerably hindered in the most necessary task of completing its water-supply by the difficulty experienced on various occasions in raising funds. It is obvious that the financial difficulties with which the Government has to deal renders impossible its committing itself to supply funds to numerous public bodies simultaneously, or on any scale definitely prescribed beforehand. But if it is the case that the terms obtainable by municipalities in the local market are so

onerous as to be to them practically prohibitory, whilst the Government could obtain money to certain amounts on much better terms, which it could lend to the municipalities at such rates of interest as to afford the Government a margin of profit, the benefit of such action would be hardly questionable, provided all the rules which are prescribed under the Acts alluded to are observed. And as it is impossible, from the necessary limitation of means of every kind, that the reforms which we desire to stimulate should be undertaken simultaneously on any considerable scale, the course suggested might be facilitated by the annual determination of a limit to the permitted aggregate of such loans; effort and expenditure being directed with persistence, in the first instance, to sanitary improvement at some of the most important points where disease can be traced directly to bad or scanty water-supply, or to some notorious defect in the arrangements for the removal of sewage.

Where there is, as is in very many instances the fact, a British garrison in close vicinity to the town, the resources of the civil authorities ought to be supplemented by a grant from the Military Budget, on condition that the cantonment participates in the benefit of the work. The protection of the principal towns and cantonments in this way will be a step of importance towards the diminution of the force and prevalence of the epidemics that so gravely affect the health of our army and of the great cities.

22. As regards rural sanitation, it may be recognized that the case is even more difficult to deal with. But it is quite as pressing that in this field also a step in advance should be taken without delay, at least in those elementary reforms which consist in the securing of wholesome water by the protection of wells for drinking from the infiltration of impurities, and the protection of the surface from general pollution. It is probable that even when funds are provided for carrying out such elementary reforms in villages, it will be necessary to consider well what means may be made available for securing their right execution, and the proper disposal of the money assigned for it. This is a matter to which the consideration of the Local Governments should be especially drawn.

To provide funds for such operations one would never suggest the introduction of loans, for which the Local Boards would practically have no security to offer, whilst the district funds, though available for appropriations to sanitary objects, have demands upon them, which leave amounts available for such objects very small, and sure to be granted only with reluctance. Here, again, I can only repeat that an initiative is what we expressly require, and that it would be well to concentrate what assignments can be made by the Local Boards upon limited areas, and so to proceed gradually. At the same time, the Local Governments would thus be able, and should make it a special object to assign grants-in-aid to Local Boards for such purposes distinctly defined.

23. It has been seen from the statistics of many years that the great enemy of health in India is fever; and there seems little room for doubt that the prevalence of this disease in all its varieties, particularly in Northern India, is very largely and intimately connected with saturation of the subsoil; whilst I fear there is hardly more room for doubt that the multiplication of our engineering works, canals, roads, and railroads, so beneficial in some respects, has tended to promote this evil, both by the great addition of moisture and raising of the subsoil water-level, caused by the canals, and by the obstruction to general spontaneous surface-drainage caused by the embankment. Besides many other statements that might be cited, the report for 1885 of Mr. Planck, Sanitary Commissioner of the North-Western Provinces, refers prominently to effects produced by such conditions on the health of the population of the Doab; and in the Despatch (Statistics and Commerce, No. 45) of 31st March 1887 Lord Cross drew especial attention to the typical case of the Town of Shamli, in the Northern Doab, noting it as a case which it was desirable to deal with experimentally and thoroughly, and with a view to obtain practical knowledge as to the application of remedial measures in such circumstances.

This is a matter which, as a Government, it seems to me, we are bound to treat to the best of our ability, and, unless the Local Governments take it up with serious concern and persistency, things will go on deteriorating. One is indeed unwilling to speak so strongly as might be done with justice on this subject, but it may at least be said that a far larger share of the funds assigned to the Irrigation Department in all parts of the Gangetic valley should be for years devoted to the draining of the soil and the mitigation of this great cause of the characteristic disease of India, malarial fever. If extensive mischief, such as I refer to, has really been produced by a system of irrigation which yields a large revenue to the State, there is a distinct obligation to spare no pains in the endeavour to remove it. And in this case there should be less difficulty about funds, for the canal budgets could bear an allotment for serious works of drainage, whilst the Canal Department presents on the spot a number of skilful and thoroughly experienced Engineers. This is a matter demanding the attention not only of the Government

of the North-Western Provinces, but that of Bengal also in connection with the Behar irrigation.

24. Neither should any other means be neglected by which the great object of ameliorating the health of India may be promoted; one of which is the persistent circulation of manuals in the different vernaculars containing suggestions for the guidance both of municipalities and of those who may be expected to take any part in the sanitary reform of villages. In these indications of a detailed kind should be given of the manner in which, with the (perhaps humble) means at command, the inhabitants may most efficiently protect their health from local causes of disease. Several such manuals have, indeed, been printed and circulated. And Mr. Bellew's "Dialogue on Sanitary Matters," which was printed at Lahore in 1880, appears to have been an eminently meritorious effort in this direction. It is pleasant also to see it stated in the Report for 1883-84 that one of the Native Municipal Commissioners of Poona was preparing a vernacular pamphlet, designed to spread among his countrymen information of the kind required. But such measures are apt to slacken, and one would gladly be assured that the diligent circulation of such instructive matter is persevered in.

I do not know to what degree instruction in sanitary principles is given in schools and colleges; a matter not to be neglected, but one which all experience assures us will be neglected unless it be persistently enforced.

Further, it is unquestionable that much good may be done by personal influence when the chief civil officer of a district or a sub-division takes a hearty interest in the subject, and shows this in his intercourse with the people. Forcible remarks on this matter, by the Government of India, are quoted in the Report for 1883-84 (Blue Book, Volume XVII.), page 200 as follows:—

"There is no doubt much truth in these remarks (*viz.*, as to the difficulties to be encountered), but it is equally true that if district officers really interest themselves in the matter, a great deal can be done by their influence and judicious guidance to improve the surface drainage of villages, to set apart and preserve in good order tanks or wells for providing pure water to the villages, to keep clean the compounds and surroundings of houses, and to provide accommodation for keeping cattle, as well as for latrine purposes, at a distance from human habitations. It is of the highest importance that the conditions under which the people live should be regarded as most intimately connected with their happiness and prosperity, and that it should not be set aside as a theory which is practically impossible."

A good impression in this way once made is likely to become durable, for when such a reform has been fairly initiated in a locality, it has been found, I believe, that the people themselves come to appreciate the good of it. And when such interest is shown, and such results are reaped, the Local Government might well give substantial expression to their value for such service rendered by officers under their authority.

As examples of what is here alluded to, I may indicate the action which appears to have been taken in the Banda District, North-Western Provinces, and by the Deputy Commissioner of Barach District, in Oudh, as referred to by the Army Sanitary Commission in the Report of Sanitary Measures in India in 1881-82 (Blue Book, Volume XV.), p. 228.

25. It will be apprehended, I trust, that there is in the remarks of this paper no disposition to under-estimate the difficulties of the task which we have taken upon us. It may be said to involve almost the creation of something like a new moral sense among the people of India. It is possible, however, that such a creation has already begun, and that it has made more progress than we are aware of. And it is well to remember how obtuse were a great part of the people of England, thirty or forty years ago, to the great need of sanitary reforms, and even how much in that field remains to be done in this country, notwithstanding the much greater facilities for spreading conviction, and the vast amount of amelioration that has been actually effected.*

And when we consider the formidable statistics before us, and above all the apparent tendency to the augmentation rather than the diminution of mortality from epidemic and endemic disease, action by every promising means within our power is absolutely incumbent upon our Government.

As regards the mitigable mortality of India itself, fever rather than cholera is the great adversary with which we have to contend; though at the same time we may be well assured that every improvement which diminishes the tendency to fever will also, in great measure, remove that fuel which lies ready to burst into flame on the advent of an epidemic of cholera.

* *e.g.*, One hardly even hears among one's friends, to this day, of a house taken on lease or purchased in London, including sometimes houses of very recent erection, in which costly work to remedy neglected drainage has not to be undertaken.

26. We have had reports, statistics, and suggestions for quarter of a century; but, taking a broad view of amelioration in the health of the country, the advance cannot be said to have been other than small. It is absolutely necessary that a new and large step forward should be made.

In addition to the sense of duty as a pressing motive to such action as we desire, the fact cannot be overlooked that the extensive presence of insanitary conditions in India is becoming yearly a more serious political evil. In these days, when inter-communication between countries, even the furthest apart, is increasing so rapidly, it is never possible to anticipate how far an evil influence of any kind may not spread. And, as a matter of fact, the ill repute of India as an alleged focus of epidemic disease encounters us all over the civilized world.

The reports of the Hygienic Congress at Vienna in 1887 show a turn of the tide of opinion as to the efficacy of quarantine, at least as regards certain high scientific authorities on the Continent. But there is no indication, I apprehend, among continental nations that the popular belief in the virtues and the necessity of that system has undergone modification.

Quite apart, however, from that particular question of quarantine, is the allegation that cholera, by whatever obscure law it is diffused, is continually generated in India, and that whilst, on the one hand, we impugn the benefits ascribed to quarantine, and indicate sanitary reforms, such as we claim to have carried out in our own country, to be the only true barrier to the spread of the disease, we of the British nation in India leave the sanitary reforms of which we speak substantially uneffected.

In these circumstances, I may remark, we have an indisputable ground for maintaining that the gradual, but persistent, carrying out of local sanitary reforms, and the judgment of the adequacy of the provision made for that object, cannot be left to depend *ultimately* upon the votes of a municipal majority. It is indeed an essential part of the duty of a municipality to carry out such reforms for the benefit of the locality; but the importance of the results of such measures, and the consequences of their being neglected, extend far beyond their local bearings.

I am unwilling to put forward this paper without the addition of some remarks on a subject closely bearing upon its purposes. I refer to the machinery in this country for reviewing sanitary proceedings in India. The mainspring of this machinery was, till recently, Dr. John Sutherland, as the guiding member of the Army Sanitary Committee. But he has now retired from the duties which he so long performed in that capacity.

These duties may be said to have consisted for many years in the preparation of careful and minute reviews of the various sanitary reports, military and civil, that come from India, for the duties connected with military sanitation in England have for a long time been few and exceptional. Dr. Sutherland's reviews have been circulated to the other members, and occasionally small modifications have been suggested, but these also have been few and exceptional. Practically his reviews have been adopted by the Committee, and in fact the work of the Committee has been his.

When completed and formally adopted by the Committee, these reviews have been submitted to the Secretary of State in Council, and forwarded by him, with any remarks that seemed desirable, to the Government of India.

The amount of Dr. Sutherland's work in this kind has been immense. But in quality and value it has been as great as in amount.

It is not known—at any rate to the present writer—whether the War Office proposes to continue the existence of the Army Sanitary Committee; or, if it does, what arrangement will be made for carrying on the duties hitherto performed by Dr. Sutherland.

Hitherto, though, as I have stated, the bulk of the work performed for many years past has been Indian, Dr. Sutherland has been a paid employé of the War Office. We cannot expect this to continue; and if Dr. Sutherland's Indian work is to be maintained, that can only be ensured by the India Office undertaking to bear the expense.

I regret to find from the papers before me that high authorities in this Office are disposed to object to the continuance of the work on such conditions.

I trust they will be prevailed on to reconsider this judgment. Technically, of course, if the War Office should not provide for the maintenance of Dr. Sutherland's duties in connection with India, and if the cost of such provision should consequently be undertaken by this Office, this may be described as creating a new appointment. But it will be, in reality, *maintaining an old appointment*, which has been of the highest value to the British Army, and to the State, in India, and the cessation of which would be a deplorable misfortune.

In ordinary times I should have urged that the maintenance of this appointment (though probably on a considerably reduced scale of remuneration) by Indian revenues should be accepted without hesitation, because, during all these years of its tenure by the wise and admirable old man who has now retired, the appointment has been maintained without charge to India.

It may be argued, of course, that the matter is not important enough, under present financial restrictions, to justify the necessary expenditure. To this I shall presently recur. But it is not, in my judgment, admissible to say, as has been said, that what is suggested is "the objectionable course of paying from Indian revenues an officer of the War Department."

It is a singular fact that it is the War Department which, in this case, has been paying an officer to do Indian Work. As I have already intimated, the work, for many years past of the Sanitary Committee, apart from its Indian work, has been of insignificant amount; not two per cent. I should guess, of the whole. It is to be recollected that these reviews of the work of the Indian sanitary officers, and of the sanitary state of things in India, have embraced all three Presidencies, and all branches, army, jails, municipal, and rural centres of population, including all the questions connected with registration and statistics bearing on sanitary conditions, whilst they have applied principles to the criticisms of the reports and facts from all, and have made suggestions on all from a central point of view, and with eminent practical knowledge. The reviews and suggestions of Dr. Sutherland, considered and concurred in by his colleagues, have carried great weight and been of high practical value, not merely from their being (as I have said) the only reviews from an independent point of the whole sanitary work and condition of India, but because the subject has even now not got beyond that position in which constant hammering at details, in reviews from a body external to the Government, such as the Army Sanitary Committee, continue indispensable. As I have said in the Minute to which this Note is appended, this sanitary business, and the indoctrination of its principles and details, not in India only, but in India *a fortiori*, is like the inculcation of a new moral sense, and as difficult. Let the Secretary of State and the Council cast an eye on one of the volumes containing the reviews in question, and see what they really are, before coming to a decision dooming the machinery which has produced them.

The suggestions made in the papers before me as to the manner in which the duties are to be done, without any one specially appointed (and paid) to do Dr. Sutherland's work, seem to me entirely unpractical. The work requires one man who has the qualifications of an expert, and whose entire duty it should be, or at least who could give a very large and undistracted share of his whole time to do it. Sir J. Fayrer and I have from time to time contributed suggestions or remarks, derived from Indian knowledge, in modification of Dr. Sutherland's drafts. But even Sir J. Fayrer, with all his medical science, is not a sanitary expert, much less am I.

It is not possible to make more detailed suggestions on the subject without knowledge of what the War Office proposes for the future constitution and duties of the Army Sanitary Committee. Should that Office determine, as I suppose they well may, to revive the work of the Committee in reference to the Army at home and in the Colonies, it is highly improbable that it would consent to commit the review of sanitary proceedings in those fields to an Indian sanitary officer. It is therefore conceivable that the course most expedient would be to have two reporting officers on the Committee, one appointed by the War Office and one by the India Office, the reviews of Indian sanitary proceedings falling to the latter to draft. But in the present stage I need not prosecute this matter further. The object of this Note is simply to urge the retention of an effective and paid expert on the Army Sanitary Committee for the review of Indian proceedings, in the manner so long and so usefully followed by Dr. Sutherland. If this link, which has hitherto existed between Indian sanitation and home criticism, be lost, I believe that the course of improvement will be checked, and that we shall also greatly risk the commencement of a retrograde course, not only as regards the health of the country, but even as regards the health of the troops.

[No. 4.]

No. 1—33-42, dated Calcutta, the 16th February 1889.

Endorsed by the Home Department.

Copy forwarded to all Local Governments and Administrations for information, in continuation of Home Department Resolution Nos. 3—212-225, dated 27th July 1888.

[No. 5.] From the Chief Secretary to the Government of Madras, to the Secretary to the Government of India, Home Department,—No. 1914-L-, dated 17th October 1888.

I am directed to acknowledge receipt of your letter, dated 7th March 1888, No. 83*, and of the Government of India Resolution, † dated 27th July 1888, No. $\frac{3}{212-225}$, Home Department (Sanitary).

*Not printed.

†*Vide* No. 1 of this Selection.

2. In paragraph 5 of the Resolution last mentioned, it is proposed to constitute a Sanitary Board for each province, which "should from the outset receive recognition, not only as a consultative body, but also as the executive agency through which the Government acts in the Sanitary Department." It is suggested that each Board should consist of "an officer of approved administrative experience, the Sanitary Commissioner for the province, and an officer of the Public Works Department skilled in sanitary engineering," with whom might be associated one or more non-official members appointed by the Local Government. It is further suggested that, in this Presidency, District Collectors might be *ex-officio* members of the Board when dealing with questions connected with their districts.

3. In reference to these suggestions, I am to point out that the constitution of a "Sanitary Board" is no new experiment, but that it was tried in this Presidency as well as in other provinces upwards of twenty years ago. The history of the Sanitary Commission appointed for Madras under the instructions of the Government of India in 1864, and of the manner in which it became transformed into the single "Commissioner," who, aided by a Deputy, now administers the Department, is of course well known to the Government of India. It will be recollected that the "Board," originally established, was found unnecessarily expensive, and that those members who had other duties to perform were practically of little use. His Excellency the Governor in Council considers that these objections would apply with equal force to the scheme now proposed by the Government of India. If the "officer of administrative experience" and the Public Works Engineer whom it is proposed to associate with the Sanitary Commissioner are to act on the Board without prejudice to their ordinary duties, the time they can spare for sanitary work must necessarily be but small; the great bulk of the work will continue to be done by the Sanitary Commissioner, while the association with this officer of a Board of colleagues will materially diminish his responsibility for the administration of the Department. If, on the other hand, the official members of the Board are all placed on special sanitary duty, the expenses of the Department will be enormously increased, although the work has not hitherto been found beyond the unaided powers of the existing Commissioner. As regards the non-official members, those gentlemen whose services would be of real value will, as a rule, be busy professional or business men, and would therefore be in the same position, so far as their opportunities for doing work on the Board are concerned, as official members holding other appointments. Collectors of districts are *ex-officio* Presidents of the District Boards, and form the channel of all communications between Government and the Municipalities within their jurisdiction. They have thus the fullest opportunity for discussing and reporting on any improvements which the Sanitary Commissioner wishes to have carried out within their ranges, and their remarks and suggestions carry quite as much influence, both with the Commissioner and with Government, as would be the case were they made *ex-officio* members of a Sanitary Board as has been proposed. The same remark applies to the heads of any special departments in respect to which the Sanitary Commissioner may from time to time have to make suggestions. Further, in Madras, the Civil Surgeons have been declared district sanitary officers and brought into relation with the Commissioner.

4. In short, in this Presidency, the existing system works well and smoothly, and, while affording full scope for outside criticism, does not impair the authority and responsibility of the Sanitary Commissioner. The Madras Government are, therefore, entirely opposed to the creation of a "Board," and trust that the Government of India will not consider it necessary to direct such a measure to be carried out in this province.

5. There is, however, one reform which the Governor in Council considers to be absolutely required, and that is the appointment of a special Sanitary Engineer. In paragraph 6 of the Resolution under reference and in paragraph 5 of your letter dated 7th March 1888, No. 83, great stress is laid by the Government of India on the necessity of providing each town, as far as possible, with an efficient system of water-supply, drainage, and conservancy. To obtain good water-supply and drainage requires in most cases the preparation of comprehensive schemes, which are quite beyond the powers of the low-paid officers whom mofussil municipalities can alone afford to employ. As a rule, the Madras Municipalities, when their finances permit, have shown themselves willing, and even anxious, to have such schemes prepared for them; *but the Public Works Department to whom they naturally look for assistance, can very rarely spare the services of men for this special duty; and when an officer is so deputed, his salary forms a heavy charge on the Municipality. In some cases it has been arranged that the Executive Engineer of the Division should work out a water or drainage scheme for a Municipality; but as such an officer generally finds his ordinary duties fully sufficient to

* *Note:*—Drainage and water-supply schemes are at present in progress in *four* towns; in *six* more schemes have been prepared, but not yet sanctioned; ; in *two*, schemes are under preparation; *four* towns wish to prepare schemes, and have asked for professional assistance for the purpose; and *three* more have been directed by Government in reviewing the current year's Budgets, to prepare schemes.

employ his whole time, the scheme is necessarily elaborated very slowly, and the results are often not satisfactory. It has further to be considered that such work requires special qualifications,—not only a knowledge of sanitary engineering as practised in Europe, but experience of similar work in the tropics,—and that these are naturally not possessed by the majority of the members of the ordinary Public Works establishment. In this connection, I am to draw attention to the initial paragraphs of a Note by the Chief Engineer, Public Works Department, herewith forwarded.

6. Under these circumstances, His Excellency in Council has come to the conclusion that it is necessary to entertain a special Sanitary Engineer, who should be an officer with adequate experience of sanitary work both in Europe and the East, and whose duty it would be to act as adviser to Municipalities and Local Boards in all important matters relating to sanitary engineering. A Municipality in want of a water or drainage scheme would apply to this officer. He would visit the town, work out a plan, and give the Council such general assistance as they may require towards its execution. In course of time, as the wants of the principal towns were supplied, his services would be available to work out similar schemes for the improvement of local areas. The Government consider that the appointment should be a special one; that the officer should be attached to the Local and Municipal Department of the Chief Secretary's office and unconnected with the ordinary Public Works Department; and that, considering the important duties and responsibilities of the post, it will not be possible to fill it efficiently on a salary of less than Rs. 1,000 rising to Rs. 1,350 by annual increments of Rs. 50. In fact, the only competent man available in this Presidency is already drawing a salary of Rs. 1,000.

7. It is intended that this salary and the cost of the Engineer's office should be mainly defrayed from Provincial funds. In paragraphs 7 and 8 of the Resolution under reference, the Government of India recognize the claim of local bodies to assistance from Government in prosecuting important sanitary works; and I am to submit that such assistance can be afforded in no better form than by the entertainment by Government of an officer who should render to Municipalities and Local Boards the services above described. Some portion of the Engineer's salary would, however, be defrayed from Local and Municipal funds, in the shape of a small percentage contribution, which would be levied on the amount of the estimate from local bodies for whom comprehensive schemes had been prepared.

8. I am to ask, therefore, that the sanction of His Excellency the Governor General in Council may be accorded at an early date to the entertainment by this Government of a Sanitary Engineer as above proposed.

9. The suggestion that a "sanitary survey" should be made of each Municipality and local area, and "plans and estimates prepared of the improvements necessary to provide each town or village with an efficient system of water-supply, drainage, and conservancy," has been already touched on in paragraph 5 above. The appointment of a Sanitary Engineer will, to a large extent, meet the requirements of the Government of India in this direction. The Madras Government do not, however, consider that it would be advisable at once to set on foot a systematic survey for every municipal town and rural tract. At present the Sanitary Commissioner and his Deputy visit every Municipality and the more important extra-municipal villages on the average about once in two years, and report to Government on their sanitary defects. In the majority of cases complete water and drainage schemes are found to be required, but financial difficulties stand in the way of their being carried out The average income of a District Municipality in this Presidency is some Rs. 29,000,* and it is clearly impossible for most towns to undertake a scheme, which may cost 4 or 5 lakhs, without very large assistance from Government. His Excellency in Council considers, therefore, that the Sanitary Engineer will best be employed at first in working out schemes for those Municipalities which are able to raise the requisite funds, and that, until this is done, a "survey" of other towns and of rural tracts would be a waste of time. The periodical inspections by the Sanitary Commissioner will, of course, continue; and as time goes on and Government are able to provide funds, or the local finances become more elastic, "survey" by the Sanitary Engineer may follow.

* *Note.*—In 1886-87, there were 54 mofussil Municipalities and their aggregate receipts for the year, exclusive of loans, amounted to Rs. 15,87,352. The Madras Municipality is provided with a Special Engineer Vice-President, who is an officer of large sanitary experience; and so the remarks made in this letter do not apply to it.

10. The remarks of the Army Sanitary Commission, published as an Appendix to the Government of India Resolution, were communicated to all Local Boards and Municipalities in this Presidency in May 1879, and the attention of these local bodies has now been again drawn to them. They were supplemented by some simple sanitary rules for observance at fairs and festivals, issued by this Government in G. O., dated 7th February 1887, No. 277-L., a copy of which is now forwarded for the information of the Government of India.

11. As regards the assistance to be given to local bodies from Provincial funds, the Madras Government await the further communication promised in paragraph 7 of the Resolution.

Extract from the Proceedings of the Government of Madras, Local and Municipal Department,—No. 227-L., dated 7th February 1887.

Read again the following paper :—

G. O., dated 3rd November 1886, No. 1454-L. F. (Financial).—Directing the publication of the Notification relative to the draft Rules for the arrangements to be made in the management and conservancy of fairs and festivals, and stating that any objection or suggestion made in respect of the Rules will be considered on or after 1st January 1887.

Read also the following papers :—

From the President, District Board, Kistna, dated 25th December 1886, No. 115.—Submitting certain suggestions regarding the arrangements to be made at "fairs and festivals."

From the President, District Board, South Canara, dated 14th January 1887, No. 34.—Submitting, for the information of Government, certain suggestions made by the President of the Udipi and Cundapur Taluk Boards with regard to the draft Rules for the arrangements, &c., to be made at fairs and festivals.

Order thereon by the Government of Madras.

The following instructions regarding sanitary measures to be adopted at fairs and festivals and on the approach of cholera will be communicated to all Collectors, Presidents of Local Boards, and Chairmen of Municipalities for information and guidance. They were drawn up by a late Sanitary Commissioner, Dr. Furnell, and contain valuable directions, which should be followed as closely as possible by all Government and Municipal Officers who may have anything to do with the management of fairs and festivals or with sanitation generally ; but the Government do not think it necessary to issue them as rules under Act V of 1884, as once intended, (G. O., dated 3rd November 1886, No. 1454-L. F.) :—

RULES FOR THE ARRANGEMENTS TO BE MADE IN THE MANAGEMENT AND CONSERVANCY OF FAIRS AND FESTIVALS.

I.—Accommodation.

Make suitable provision for the probable number of persons who may not be able to find accommodation in adjacent towns and villages, as follows :—

(i) Select, level, and lay out suitable encamping grounds, bearing in mind the principal requirements of elevation, proximity to place of concourse, sufficiency of a pure water-supply, dry, clean, and untainted soil, and direction of prevailing winds.

(ii) Lay out this ground in divisions or sections, separated by streets not less than 40 feet wide, and, when space permits, with subsidiary streets 20 feet wide.

(iii) Erect upon these sites temporary sheds or huts for the accommodation of those who may require them.

(iv) Leave space to leeward of each section for the carts and cattle of the people occupying each section.

(v) As far as possible, assign sections to different castes, indicating each by a legible sign-board.

II.—Conservancy.

1. Erect suitable latrines for males and females in number sufficient to meet the requirements of the crowd.

2. Establish separate pits for the burial of (*a*) rubbish, and (*b*) filth.

3. Organize a conservancy establishment, according to requirements, for the following purposes :—

(*a*) The removal daily of all rubbish and refuse, including the dung of cattle, from the streets, both of the town and camp, and from the encamping-ground generally.

(*b*) The removal of all human excreta from the public latrines, and from residences within the town.

(*c*) The disposal of the same in the filth-pits.

III.—Water.

1. Select suitable but distinct tanks, wells, reservoirs, or other sources of water-supply—

(*a*) for drinking and domestic purposes,

(*b*) for bathing, and

(*c*) for watering cattle.

2. Obtain a police guard for the source of supply selected for drinking, to guard it from contamination.

IV.—Medical Supervision.

1. Appoint, as sanitary officer, a medical or subordinate medical officer, whose duty it shall be to superintend the sanitary arrangements generally, to visit the hospitals and places for distribution of medicines, to make himself acquainted with the medical history of the assemblage as far as possible from day to day, keeping a return of all deaths reported through the police.

2. Establish temporary hospitals, with suitable establishments, at convenient sites, and in number proportionate to the assembly.

3. Depute medical subordinates to examine at the barriers all travellers coming or departing who may appear to be labouring under sickness.

4. Distribute, through suitable agency and at selected localities, "cholera pills" for immediate use by persons attacked with cholera.

V.—Precautions against Accidents.

1. Assign gates for ingress and egress into each town, temple, or shrine in cases in which numbers are considerable, and where instances of loss of life have occurred, or may be apprehended, from want of due arrangements of this nature.

2. Erect barriers, where necessary, to prevent the undue influx of people into limited areas fully occupied by devotees, admitting fresh worshippers only as numbers decrease by egress from the opposite barrier gate.

VI.—Police.

1. The local Sub-Magistrate to be instructed to bring to the notice of the Sanitary Officer all deaths occurring within the limits of the camp or towns.

2. Publicity to be given through the Sub-Magistrate to the fact that hospitals are established and depôts opened for the distribution of cholera medicines.

3. Notices to this effect to be posted in the vernacular all over the camp and town, and pilgrims, or those frequenting fairs, to be instructed to apply for such medicines on the first occurrence of illness.

4. Notices of the arrangements made for the general convenience of the people to be also freely distributed amongst them, and posted upon all conspicuous places.

VII.—Construction of Latrines.

1. Latrines to consist of walled spaces enclosed by walls or tatties in which parallel trenches should be dug from 1 to 2 feet wide by 3 feet deep. The soil removed from these trenches to be stored at their edges, and a portion daily shovelled in to cover the night-soil.

2. At the termination of the feast, these trenches should be fully covered in.

VIII.—General.

1. Prior to feasts and festivals, chattrams, choultries, and grounds generally resorted to by pilgrims as camping or halting grounds, to be put by district authorities into a good sanitary condition, and provision made for a pure water-supply. The same to be maintained in a good sanitary state till after the dispersion of the pilgrims.

2. At the termination of the feast or festival, should cholera have prevailed amongst the people, the halting grounds to be ploughed up, and chattrams and choultries fumigated and whitewashed.

FORM OF REPORT TO BE SUBMITTED BY MEDICAL SUBORDINATES ON THE SANITARY CONDITION AT IMPORTANT FAIRS AND FESTIVALS.

1. *Water-supply.*—Its nature and source. Quality, good or otherwise. Any suggestions for its improvement. How conserved?

2. *Epidemics.*—What measures taken to prevent or modify?

3. Principal causes of admission to hospital. General health of people.

4. *Conservancy.*—Latrines, how many? If freely used, on what system? Establishment of sweepers, sufficient or otherwise?

5. Recommendations, if any, for management of future Festivals.

SANITARY REGULATIONS TO BE OBSERVED ON THE PROBABLE ADVENT OF CHOLERA.

Water.

1. Water is probably the most ordinary means by which cholera is disseminated in a community. It is consequently at all times necessary, but most essentially so when cholera is about, to keep all sources of water-supply as clean and free from contamination as possible.

2. This will best be done by setting aside in all communities, villages as well as towns, certain tanks from which drinking-water alone may be drawn.

3. Over these tanks watchmen should be placed, whose duty it will be to prevent any one washing the body or clothes therein.

4. When drinking-water is drawn from wells, it should be strictly forbidden for people to wash bodies or clothes quite near the well, as is often done, so that the dirty water can easily sink into the earth and find its way back.

5. When rivers or streams are the source of drinking-water, arrangements should be made that cattle, &c., are watered down-stream and the supply for human consumption drawn above.

6. All washing of clothes and persons should, if possible, be prohibited in running streams; for although arrangements can be made by washing down-stream to preserve, say, village A, yet the contaminated water runs on to village B from the villages above, and thus becomes a source of danger.

7. When cholera is present in a community, it is better to boil all water before using it for drinking purposes.

Latrines.

8. Great care is necessary as to the disposal of fæcal matter. The public latrines should be kept as clean as possible, dry earth being freely used; and as these places are periodically cleaned, the community should be encouraged to use them, instead of holes and cesspools within their houses.

9. If cess-pools and private privies are used, these should be cleaned out as often as possible, and dry earth at all times freely used to cover recent deposits.

10. No cess-pool should be used that is near a well of drinking-water. It should be closed at once.

11. If the latrines are not sufficiently numerous for the wants of the community, temporary latrines, with moveable tattie walls, should be constructed in waste places to leeward of prevailing wind (sketch, plan, and estimate of such latrines are given in the Sanitary Commissioner's Annual Report for 1880).

12. Inside these latrines trenches 1 foot wide and 2 feet deep may be dug, and the earth shovelled in again when the trenches have been used, thus covering the deposits. The latrine walls can then be easily moved on to a fresh place.

When Cholera has supervened.

13. When cholera attacks a community, it generally at first appears in isolated cases; and, if care and attention is paid to prevent its spreading, much may be done to mitigate the severity of the epidemic.

14. The house wherein a cholera case has occurred, and its inmates, should be, as much as is consistent with humanity, cut off from communication with the rest of the community.

15. Water, food, clothes, &c., from that house should not be taken to other houses.

16. People, except those professionally obliged to, should be forbidden to visit the house until it has been properly disinfected.

17. All clothes belonging to the patient, especially if he has died, should, if possible, be destroyed by fire, or, if washed, this should be done with water brought to the house; the clothes should not be taken to the tank for that purpose.

18. All discharges from the patient should at once be removed and buried in pits; if practicable, they should be disinfected. Dry-earth, charcoal, and ashes are the cheapest and most easily procured disinfectants.

19. Houses in which cholera has occurred should be disinfected; this may be done by means of sulphurous acid in the following manner: All inmates should be removed, and the doors and windows being closed, pans of burning charcoal should be introduced, and on these a quantity of sulphur powder thrown. The room should remain closed for some hours.

20. After this, the rooms having been opened and ventilated, the walls should be scraped, fresh whitewashed, the old earth from the floors removed, and fresh earth used to replace it.

21. In short, *clean* water, *clean* food, the free use of salt, and *cleanliness* generally are the best preventatives of the spread of cholera.

Treatment of Cholera.

22. There is no specific treatment of cholera which can be looked upon with confidence, numberless as are the cures constantly published in the papers generally by unscientific people.

23. The free use of salt has been strongly recommended as a preventer, and there can be no doubt that people deprived of that condiment fall easy victims to this dreadful malady. Salt should always be used with food, and more freely so when cholera is about.

24. Cholera often shows itself first by a premonitory diarrhœa, and people should be encouraged to apply at once, when so suffering, for treatment.

25. Ten to twenty drops of chlorodyne in some spirits and water, repeated in two or three hours (to those who can afford such a remedy), will often cut short such a diarrhœa.

26. Cheaper medicines, such as chalk mixture, Patterson's pills, cholera drops, should be kept at the head-quarters of communities, to be dispensed by some intelligent person when no doctor is available, and much good may thus be done in checking premonitory diarrhœa.

27. When cholera is fully established, professional aid must of course, when available, be immediately procured. It would be useless to lay down any general rules for treatment under such circumstances.

Note by the Chief Engineer, Public Works Department, Madras, dated 17th May 1888.

How Municipalities, which are not rich enough to pay for the services of an Engineer, are to have plans and estimates prepared of all the improvements necessary to provide their town with an efficient system of drainage, water-supply, and conservancy I cannot see. The Officiating Secretary to the Government of India seems to think that the local Engineering authorities can arrange it all, but it is certain that neither the Public Works Department nor the Local Fund Engineers can undertake the work required.

2. The preparation of a scheme for drainage and water-supply for even the smallest of the Municipalities requires the employment of an experienced and competent officer for several months, and the work cannot be done by a subordinate under the supervision of an officer who has an extensive charge, and whose duties require him to be away for weeks at a time. Whenever it has been possible, officers of this Department helped Municipalities to work out such schemes; but, as a rule, officers have not time to devote to such work, and all officers are not qualified for work of this special character.

3. The general question of sanitation is now attracting attention, and it seems desirable that some definite arrangements should be made for the purpose of dealing scientifically with it. It is not merely a question of money, because even if a Municipality can find the funds to pay for a sanitary survey and the preparation of drainage and water-supply schemes, qualified Engineers are not available for the work; the open market does not at present provide such men, and neither the Government nor the Local Fund Boards, who have some officers qualified for the work, can spare their services.

4. The Government provide a Sanitary Commissioner, who, being a medical officer, can only bring to notice the necessity for sanitation in the towns he visits, and point out in what direction reform is necessary. He can ascertain that the water-supply is bad and the drainage defective, but he cannot, beyond giving an opinion on the quality of the water supplied, judge of any scheme for water-supply or drainage. When, therefore, the Sanitary Commissioner brings to notice that the circumstances of some towns are exceptionally bad, the Government are driven to find an officer to prepare a scheme for improvement, which they submit to their professional advisers, who, with a very imperfect acquaintance with the locality, if any, decide whether it is suitable.

5. To the Government therefore, whether they come with money in their hands or not, the Municipalities must look for men, and it seems to me that the best step the Government could take would be the appointment of a Sanitary Engineer, who might, if desired, with the existing Sanitary Commissioner, form a "Sanitary Board." This officer would be selected for his previous study of such subjects as water-supply of towns and drainage, and would devote his whole time to this branch of engineering. Under his direction surveyors might be employed by Municipalities (who would, of course, have to provide for their pay), who would commence the work of sanitary survey; and under his immediate supervision schemes of water-supply and drainage could be undertaken by Municipalities who could afford to pay the staff necessary to make the surveys, plans, &c. He could not, of course, start schemes all over the country at once, but would have to work in one town for perhaps two or three months, and then go on to another, meanwhile absenting himself only for a few days at a time to attend meetings of his Board, and to give his attention to general questions. The schemes, when worked out, could be submitted for the approval of Government in the Public Works Department, before being dealt with in the Local and Municipal (Financial) Department.

6. When a Municipality could afford to pay for the services of an Engineer to prepare a scheme for water-supply and drainage, and could secure the services of a competent man, he should work in communication with the Sanitary Engineer, through whom the scheme should be submitted to Government.

7. So many applications for help in preparation of such schemes are now coming in from all parts of the Presidency, that something should be done to give assistance to the local bodies

who are showing such signs of vitality; and as there is valid objection to Government giving grants-in-aid to Municipalities, the best means of affording help seems to be the appointment of an officer who could, while securing the scientific treatment of sanitary improvements generally, save the Municipalities the expense which the employment of an officer of such standing and experience as is necessary to work out their schemes must entail.

From H. J. S. COTTON, Esq., C.S., Officiating Secretary to the Government of Bengal, Municipal Department, to the Secretary to the Government of India,—No. 185, dated Calcutta, the 25th January 1889. [No. 6.]

With reference to the Resolution No. 3—212-225, dated 27th July 1888, recorded by the Government of India on sanitary reform, in which it is suggested that a Sanitary Board should be established in each province and be entrusted with the control and supervision over sanitary works, whether undertaken in urban or rural areas, I am now directed to submit, for the consideration of the Government of India, a copy of a Minute, dated 17th January 1889, by His Honour the Lieutenant-Governor on the subject.

Minute by H. H. the Lieutenant-Governor on the Resolution of 27th July 1888.

I have kept these papers an unduly long time, because I have seen no practical way of giving effect to the proposals of the Government of India, and have shrunk from sending up a scheme which can only be a paper scheme and not a working one. I do not find that further consideration and discussion has brought me much nearer a real solution of the problem, and, as the Government of India are pressing for a reply, I can only place before them such alternatives as appear to me to offer possible means of dealing with it.

The Government of India in urging us to take up the question of dealing with the sanitary requirements of both urban and rural areas, recognize the necessity of directing attention, in the first place, to the executive agency available, and to the provision of funds. As regards the executive agency available, they point out quite truly that Municipalities in the one case, and District and Local Boards in the other, are agencies ready to our hand; but they seem scarcely to attach adequate importance to the supreme difficulty that exists as to providing funds.

I am not aware that District Boards have, as is stated, sufficient powers of local taxation, nor do I understand that the Resolution in the Gazette of 5th January extends to Local Boards, as it does to Municipalities, facilities for borrowing, through the instrumentality of the Local Government, for purposes of sanitation. But assuming that Municipalities and Boards have the requisite powers of taxation for sanitary purposes (and it is certain that in neither case is it possible for them to divert an appreciable amount of their existing income from existing objects of expenditure), still the question remains—"what likelihood is there of their exercising those powers?" It may be said that in the larger and more advanced Municipalities native public opinion is so far educated in sanitary matters as to show a real desire for pure drinking water. Numerous proofs of this reach me; but I fear that, beyond this, in mofussil Municipalities even, educated public opinion as a rule does not go. In matters of town drainage, disposal of filth, latrine arrangements, house wells, tank-bathing, and the like, the vast majority not only of the voters, but of their representatives, would prefer to have old customs uninterfered with, even if the change cost them nothing, and if they are to be taxed for sanitary improvements, such taxation can only be imposed by outside force, and will not be willingly accepted by local bodies. If sanitation is to be postponed till such taxation is spontaneously adopted by them, no early fruition of its advantages is to be looked for. If these premises are correct, we have to consider the least objectionable method of providing local bodies with the requisite funds, and to create the outside force which shall stimulate and control the application of these funds to proper objects.

The latter part of the problem is less insoluble than the former. The Government of India propose a Sanitary Board, which shall practically be the Administrative Department of the Government in these matters. The constitution of the Board as proposed has, to my mind, one defect, which would greatly interfere with its usefulness. The officers are none of them to be whole-time officers, but will only give up such time and attention as they can spare from their other duties to the sanitary administration of the country. This means inevitably that they would be a consultative and not an initiating Board, they would consider questions which local bodies might send up to them; but with little money to spend, with no belief in the extreme urgency of sanitation and a strong aversion to any schemes involving additional taxation, it is not to be expected that local bodies will greatly burthen such a Board by suggesting sanitary problems for solution.

If such a Board is to be made a reality, I would constitute it differently. The President should be a whole-time officer of marked administrative ability and experience, and should be placed both in salary and status in a position in no way inferior to the heads of other departments, such as Police and Jails; indeed, as he must be a Civilian, and the work he has to do would at first be of exceptional difficulty and delicacy, the first holder of the office should, I think, be of Commissioner's rank. He should, in addition to the other officers constituting the Board, as proposed by the Government of India, have the assistance of a whole-time Sanitary Engineer, and it would probaby be necessary to give, if not a salary, at least fees to the native members of the Board.

To the Board so constituted I would assign the following programme. The President should have a seat in the Bengal Legislative Council. While the Board are completing a sanitary survey of the towns of Bengal, and ascertaining their more pressing requirements in the way of water-supply, drainage, and sewerage (leaving rural tracts for a later stage), and drawing up a rough programme of schemes for dealing with them, the President would have to grapple with the question of providing funds, ascertaining how far the existing resources of the towns could meet the interest of the requisite loans, and how far the deficiency would have to be supplied by local taxation: to consider what form local taxation should take: whether, for instance, a portion of the Local and Provincial funds now devoted to education should be diverted to sanitation, their place being taken by an educational cess, or whether a direct sanitary cess, both for town and country, should be levied; he would have to take charge of the legislation requisite for providing such taxation as might be determined on, and for regulating the duties and powers of the Sanitary Board in relation to the Municipalities and District Boards (duties and powers which might hereafter be usefully extended beyond matters of pure sanitation), and when the machinery was in working order, he would, with his Board's assistance, have to stimulate the action of local bodies, and use the powers of control which the law would give to ensuring that the requisite funds were raised and properly applied to the already ascertained wants of the various Corporations in matters sanitary. Such a programme as this would occupy the whole time and energy of the best man available for several years; and though, hereafter, the duties of President might be amalgamated with those of some other office, that day is not, in my opinion, within measurable distance. Short of the above scheme I can formulate nothing which would give real vitality and motive power to the policy of energetic sanitary reform, which it is the desire of the Government of India to induce the Local Governments to adopt; and though I believe such a scheme would undoubtedly succeed in introducing vast sanitary improvements, in diminishing mortality and sickness, and even (which is perhaps of still greater importance) in educating the people to apprehend in some degree the value of sanitation as a factor in every-day life, still these advantages would be purchased at a very costly price.

The direct expenditure of Government on the Board would not be less than Rs. 80,000 annually, The mere existence of such a Board would force the Government into great indirect expenditure, both in the way of putting its own house in order and giving grants-in-aid: the scheme would be bitterly unpopular, not only as bringing stringent official control to bear on local self-governing bodies, but as involving taxation for an object which the people are not yet in a position to appreciate. Moreover, the requisite legislation would only be carried out at the cost of an amount of friction, which is certainly very much to be deprecated.

At the same time nothing short of this will suffice to provide the funds and give the impetus requisite to carry out an energetic policy of sanitary reform. By these means the Resolution of the Government of India may be translated into action: without them it will remain a counsel of perfection.

The question of funds is really at the bottom of the whole problem. The tendency of the Government of India's letter No. 5362, dated 2nd October last, which deals with the separation of Local from Provincial finance, is clearly in the direction of finding funds for local purposes by resort to local taxation. At all events it is impossible that, under existing conditions, Provincial resources should supply any appreciable portion of the expenditure requisite. On the one hand, we are urged from above to reform the police,—a most pressing and most necessary reform, which I have only not taken in hand because of the impossibility of finding money; we are urged, in the most influential quarters, and on the strongest grounds, to increase very largely our native judicial service, to provide adequate accommodation for them, and to improve their ministerial establishments; we are urged in matters educational to start training schools; we are aware that our contributions to lower class education are not adequate to our responsibilities; we are aware that beyond the expenditure of the road cess, already levied at the maximum rate, our District Boards have such insufficient funds that progressive administration is impossible for them; yet, with all these crying wants already pressing on us, and forced as we are by want of means to close our ears to them, to accept stagnation, wherever progress involves (as it

always does) expenditure, we have our Provincial resources further diminished by a sum of 10 lakhs annually, which is practically the whole margin between our receipts and our irreducible expenditure.

To suppose that in these circumstances the Provincial Government should contribute largely as suggested in paragraphs 7 and 8 of the Resolution, is to expect that we can extract more than sixteen annas out of a rupee. Even the sum which the establishment of such a Board as I have above sketched would cost, is more than the Provincial Government can provide from its present depleted resources.

What I desire specially to make clear is that a "forward policy" in matters of sanitation, such as would satisfy the Army Sanitary Commissioners at home and sanitary reformers out here, can only be enforced by a powerful administrative department with legal powers to introduce compulsory sanitation by means of compulsory taxation. They would even then have to employ an unwilling executive agency, who could be kept up to the mark only under the stress of stringent control or fear of actual supersession. No immediate advance can be expected from local bodies acting on their own initiative, and depending on such grants as can be spared from Provincial revenues: it would certainly be a matter of difficulty to persuade them to make use, for sanitary purposes, of permissive powers of local taxation.

The above scheme may, however, be deemed too drastic, and the difficulties too great to be consistent with a cautious advance. I do not myself think it should be adopted except on a full determination to introduce an energetic sanitary policy over the whole country. If this view be accepted, I would apply to the existing system of occasional grants by Government and occasional progress in Municipalities the stimulus which such a Board as the Government of India propose. It will not be able to make much immediate progress in the way of working up projects, or enforcing action on local bodies: but it can advise on the general question of taxation, and it can be the means of communication between the Government and these bodies on sanitary subjects. I would in that case attach the duties of President to the Junior Member of the Board of Revenue, who is less overworked than most administrative officers of experience in Calcutta. The scheme will doubtless have a slightly stimulating effect, and may lead hereafter to more systematic sanitation being accepted. It will not involve action too much in advance of the public opinion of our executive bodies, and it will certainly not create the intense opposition, which such a driving power as I have sketched out would inevitably establish.

17th January 1889. S. C. BAYLEY.

From J. B. THOMSON, Esq., Secretary to the Government of the North-Western Provinces and Oudh, to the Secretary to the Government of India,—No. 59—V-10B, dated Allahabad, the 14th March 1889. [No. 7.]

With reference to your reminder No. 26, dated the 9th February 1889, enquiring what action has been taken towards the establishment of a Provincial Sanitary Board, I am directed to forward, for the information of His Excellency the Governor General in Council, a copy of a Resolution * recorded by this Government on the subject.

* No. 27—V-10B., dated 9th February 1889.

Extract from the Proceedings of the Government of the North-Western Provinces and Oudh No. 27—V-10 B., dated Allahabad, the 9th February 1889.

READ—

The undermentioned papers regarding the necessity of taking measures for the control and supervision of sanitary administration in towns and rural districts:—

(1) Resolution by the Government of India, Home Department, No. 3—212-225, dated 27th July 1888.
(2) Letter from the Government of India No. 48, dated 14th February 1888.
(3) Circular letter to the Sanitary Commissioner, North-Western Provinces and Oudh, and to Commissioners of Divisions in the North-Western Provinces and Oudh, No. 50 S.—V-10B., dated 12th March 1888.
(4) Replies from Sanitary Commissioner, North-Western Provinces and Oudh, and from Commissioners of Divisions in the North-Western Provinces and Oudh.

READ also—

Resolutions by the Government of India in the Department of Finance and Commerce, Nos. 13, 14 and 15, dated 1st January 1889, regarding the grant of advances and loans to local bodies.

OBSERVATIONS.—The Government of India in its Resolution of the 27th July 1888 has called the attention of Local Governments to the necessity of taking measures for extending the machinery at present employed in the control and supervision of sanitary adminstration whether

in towns or in rural districts. It has indicated the mode in which a development of the present system might be attempted, and has expressed its opinion that the time has come when a more forward, though cautious and tentative, policy would be opportune. With regard to Municipalities, the Government of India say little. The necessary machinery, whether for control or for raising funds, is provided within those areas by the Municipal Acts; and in regard to the several towns under these Acts the Government of India merely write that "they may in future look with greater confidence to Municipal Committees for active assistance in carrying into effect the measures of sanitary improvement declared to be necessary for the towns over which they preside." With regard to rural areas, while admitting that among the village population the sense of the need for sanitary reform is but little, if at all, more developed than it was when a Royal Commission reported a quarter of a century ago, the Government of India do not doubt that in the matter of executive agency a great improvement has been effected by the District and Local Boards Acts. "This legislation," it is added, "has provided the Government of India, for the first time, with the means of creating that agency for executing sanitary reform in rural areas, without which its previous exertions proved comparatively fruitless." Although the agency is as yet in its infancy, it is impressed upon Local Governments that "from the beginning the promotion of sanitation should be regarded as one of the most important duties of District and Local Boards, and of village unions, where they exist." To guide, however, and direct the operations of these Boards, the Government of India considers it eminently desirable that there should be established in each province a Sanitary Board through which the Local Government could operate, and to which, subject to the orders of the Local Government, the control and supervision of sanitary works, whether in urban or rural areas, should be entrusted. The Sanitary Board which the Government of India wishes to create "should," it is added, "from the outset receive recognition not only as a consultative body, but also as the executive agency through which the Government acts in the Sanitary Department." The Resolution of the Government of India goes on to indicate the officers of whom such a Board might be composed, and desires that, under the orders of the various Local Governments, they should be in constant communication with the Sanitary Commissioner of the Government of India.

2. The provision of pure water and drainage, especially in those localities in which the construction of public works, such as railways and canal embankments, have interfered with the natural flow of water, and may have injuriously affected the people's health, are especially indicated as matters calling for early attention. Simple rules for the regulation of village sanitation are also suggested. "Wherever," it is added, "the existing law makes no provision or insufficient provision for the enforcement of necessary sanitary measures in rural areas, there should be no hesitation in taking the necessary power by legislation." The Government of India then discusses the question of raising, by local taxation, the funds necessary for local expenditure, and adds, with regard to loans, that it has taken the subject of loans to local bodies into careful consideration (the result of which, it may be here added, has been subsequently embodied in its Resolution of 1st January 1889, published since the date of the Resolution of July 27th). The question of contribution from Provincial resources on the grant-in-aid principle is finally glanced at, and it is left to the Local Governments to give effect to the principles and measures thus laid down by the Government of India.

3. The subject divides itself obviously into four heads :—

Firstly.—Sanitary reform in municipalities.

Secondly.— Sanitary reform in rural areas.

Thirdly.—The nature of the control and agency to be established, and the individuals of whom such agency should be composed.

Fourthly.—Provision of funds.

Active measures have already been taken in these provinces in the past year to obtain in some of the larger cities a proper supply of drinking water, and the services of a competent Engineer have been especially placed by the Government of India, in accordance with the request of this Government, at the disposal of Municipalities for this purpose. The Engineer in question, Mr. Hughes, has already submitted a plan for the water-supply of Agra, and the question of raising the necessary funds for that city is now under the immediate consideration of this Government. It is probable that Mr. Hughes will shortly furnish the necessary scheme for a water-supply for the Municipality of Allahabad, the members of that Municipality having also actively taken up the subject of providing a better water-supply for their town. Mr. Hughes is also in consultation with the Municipality of Benares, and his Honour the Lieutenant-Governor is awaiting the result of the deliberations of the Municipal Commissioners of that very important city, there being probably no town in Upper India which is in a more filthy state than Benares; none which is more resorted to by pilgrims from all parts of India; none consequently which more urgently requires an efficient system of water-supply and drainage; none which is so

entirely devoid of both ; and few which offer greater facilities for those measures. In Lucknow experiments have for some time been going on to see whether a water-supply cannot be obtained by means of artesian wells. Other municipalities have also asked for Mr. Hughes' services, and at present there seems to be no need for further immediate action with regard to this branch of the subject.

4. With regard to rural areas, however, the case is far otherwise. The great difficulty of sanitation in India will, for a long time, be found in the fact that its population is spread, for the greater part, over tens of thousands of small villages, many of them composed of houses and huts in too close proximity to one another, built on insalubrious sites, surrounded by decaying matter of every description, and frequently unprovided with a pure and unpolluted supply of potable water; while the habits of the people are, on the one hand, opposed to laws of sanitary conservancy, and on the other, any attempt to coerce them into sanitary observance of such laws is in the highest degree surrounded by difficulties, owing to the enormous area and population concerned, the countless small centres in which it is congregated, the comparatively small agency which could be employed in introducing reforms, and the danger, or it might be said the certainty, of the subordinate staff of such agency abusing the authority given them, and exercising it for their own pecuniary profit. The Government of India in the Home Department, in its letter No. 48, dated the 14th February 1888, in acknowledging receipt of the Report of the Sanitary Commissioner for the year 1886, called attention to this part of the subject, and on the 12th of the ensuing month the Government of the United Provinces issued a Circular Order to the Sanitary Commissioner and all district officials, asking whether, in their opinion, it would be practicable to issue rules in the spirit of instructions given by the Government of India in its letter, the Government of India having anticipated therein the substance of the instructions embodied in their Resolution of July 27th. Replies to the Circular of this Government have been received. At present it is unnecessary to deal with them further than to say that District Officers, as a rule, seem to recognize the magnitude and the danger of the task suggested to them; and to be more apprehensive of the evils which will arise from the introduction of the machinery required for ensuring some degree of sanitary conservancy in rural areas, than of the dangers at present existing from the prevalence of sanitary neglect.

5. The third question is the constitution of a Board to which could be delegated the charge of devising, under the authority of the Local Government, the measures necessary gradually to extend sanitary reform in rural areas, to control and supervise the sanitary condition of municipalities, and to advise the Government generally upon all points connected with sanitary questions. His Honour the Lieutenant-Governor and Chief Commissioner proposes to give effect to the desire of the Government of India by the creation of a Board, such as that which it has indicated. He thinks, however, that in this matter it would be prudent to proceed tentatively, and to delay the assignment of actual executive functions to the Board, such as are contemplated by the Government of India, until the Board shall have itself completed a preliminary examination of the subject referred to, and have laid down for the approval of the Government the lines of a scheme which would at once contain a working plan of the operations, whether with regard to municipalities, or village areas; recommendations for the agency which they would desire to adopt for the execution of such a plan; and a statement of the attitude in which they themselves would propose to stand, whether in regard to the Government and the Sanitary Commissioner on the one side, or the municipalities and rural areas on the other. Until these preliminaries have been carefully considered and reported on, it would be premature to force executive action upon a body of which the members have important, and in many cases onerous, duties of their own, who can only meet at stated times, and whose ability consequently to discharge duties of an executive character forms not the least of the many doubtful questions surrounding the problem.

6. Finally, with regard to funds, the recent Resolution of the Government of India in respect to loans to local bodies has cleared the ground so far as the municipalities are concerned. District and Local Boards, however, under the existing law, have no power to impose taxations or to borrow in these provinces. Moreover, nearly all of them are largely subsidized by the Provincial Government, and have no security to offer for loans. Not the least of the difficulties surrounding the scheme will be found in this direction. There seems little or no possibility of district bodies being able to raise money for sanitary purposes, so far as these provinces are concerned; while, on the other hand, the financial retrenchments to which the Government of India has found it necessary to resort, and the difficulties which at present surround that Government in connection with its resources, render it obligatory on Provincial Governments to devote such funds as the Government of India may from time to time find it practicable to leave at their disposal mainly to those objects which are of the first necessity, and which are essential to the working of the ordinary mechanism of the Government. So far, however, as may be practicable, this

Government will endeavour to make such provision of funds from time to time as shall ensure progress being made in directions indicated by the Board.

7. His Honour the Lieutenant-Governor and Chief Commissioner, on a consideration of the whole subject, as reviewed in the preceding remarks, has decided for the present to nominate as a Sanitary Board—whose duties in the first instance will be confined to preparing a working scheme of operations in the United Provinces, and to indicating the machinery through which it could be administered, and the precise position which it can itself best occupy in the executive body—the following Officers: both the Secretaries to the Government in the Public Works Department, the senior Secretary being President of the Board; the Secretary to Government in charge of the Department of Municipalities and Local Boards; the Inspector General of Civil Hospitals; the Sanitary Commissioner; the Legal Remembrancer, and the Director of Land Records and Agriculture, who should also be Secretary to the Board. The Commissioner of each Division will be *ex-officio* a Member of the Board, and two native gentlemen should be selected by him, who are willing to be placed upon the Board, and whose services are likely to be useful. The Government, after approval, will formally constitute such gentlemen Members of the Board. A copy of the Resolution of the Government of India, of its letter of the 14th February, and of the replies received from the District Officers, will be forwarded to each of the Members of the Board, including the several Commissioners of Divisions. The President will arrange for a preliminary meeting of the Members at such time and place as may be desirable; the Commissioner of the Division in which the meeting is held, and any other Commissioner whose presence is desired, being summoned as a Member of the Board. The Board will understand that the immediate subject of its deliberations will be to draw up and present to the Government a plan, having for its object the most practicable lines on which to carry out the wishes of the Government of India. This will include, for example, a review of the towns in which, from their importance or other causes, sanitary measures are more urgently needed. It should also furnish suggestions for a sanitary survey. Such a survey would probably be carried out, in the first instance, in selected parts of the province; but a list could be drawn up at once of the more insalubrious tracts in which the drainage has been intercepted owing to the existence of railways, or canals, or other works carried out by the Government. The Board should indicate those localities in which it considers action to be most necessary, leaving, for a later stage of its proceedings, the actual measures to be taken to ascertain the detailed work to be done. It should further consider the replies of the District Officers to the Circular Letter of this Government of the 12th March last, and should examine the suggestions thrown out in the correspondence forwarded to them with this Resolution in their relation to the least objectionable manner of inaugurating some more or less comprehensive scheme of sanitary reform in rural areas. The Members of the Board, from their personal experience of the country, will not be inclined to under-estimate the dangers of carrying into effect proposals for a minute or vexatious system of control or supervision in the smaller towns or villages. But it is possible that they may consider that the presence of District and Local Boards may prove of material assistance in this direction. The Members of those Boards are not infrequently large landlords who have means of ensuring in their own villages some degree of attention to sanitary matters, and of assisting in obtaining information on points concerning the sanitary measures to be adopted in their villages which no other agency could so unobjectionably obtain. It is probably in a tentative and cautious employment of this agency that the Board may be disposed to seek for a practical means of adopting at least the first principles of sanitary reform in rural areas. The Bill about to be considered in the Bombay Legislative Council for the furtherance of sanitary measures will also be studied by them. With the question of funds the Board need not occupy itself. For the present, in their report, it will be sufficient to estimate approximately the cost of such measures as, in accordance with the terms of this Resolution, they indicate as of primary necessity. They should finally very carefully examine the precise position in which they can be most usefully placed with regard, on the one hand, to the Government and the Sanitary Commissioner, who is at present the Officer charged with a portion of the duties which are to be delegated to the Board, and, on the other, with respect to the Civil Divisional or District Officers, the Municipal, District, and Local Boards, and the Officers of the Public Works Department, through whose agency the actual execution of the measures from time to time determined upon must be carried out.

8. The Lieutenant-Governor and Chief Commissioner does not desire to hurry the Members of the Board in the submission of their recommendations on the preliminary points now referred to them. He is well aware that to be useful their Report must embrace the result of careful enquiry from both officials and non-officials. At the present season most, however, of the several Officers of whom the Board is to be composed are on tour in distant parts of the provinces. It is better to lay deliberately the foundations of any measures which are to be determined on, than,

under the influence of the desire to make a commencement, to hasten the submission of insufficiently-considered proposals. The Board, through their President, can keep themselves in close communication with the Government, and from time to time obtain such information or intimation of its views as they may think desirable, and His Honour trusts that they will be in a position, sometime before the close of the ensuing rainy season, to submit to him their recommendations on the several points defined in this Resolution, and personally to consult with him as to the practical measures necessary to give effect to such of their recommendations as may be finally approved by Government.

ORDER.—Ordered, that a copy of the above Resolution, together with copies of the correspondence read above [Nos. (1), (2), and (4)] be forwarded to the following gentlemen for information and guidance:—

(1) The Secretary to the Government, North-Western Provinces and Oudh, Public Works Department.
(2) The Joint-Secretary to the Government, North-Western Provinces and Oudh, Public Works Department.
(3) The Inspector General of Civil Hospitals, North-Western Provinces and Oudh.
(4) The Sanitary Commissioner, North-Western Provinces and Oudh.
(5) The Legal Remembrancer to Government, North-Western Provinces and Oudh.
(6) The Director of Land Records and Agriculture, North-Western Provinces and Oudh.
(7) All Commissioners of Divisions in the North-Western Provinces and Oudh.

Ordered, also, that a copy of the Resolution be published in the *North-Western Provinces and Oudh Government Gazette*.

J. B. THOMSON,
Secretary to Government, North-Western Provinces and Oudh.

From A. J. LAWRENCE, Esq., Commissioner, Allahabad Division, to the Secretary to the Government of the North-Western Provinces and Oudh,—No. 2117—159, dated the 2nd April 1888.

I am asked in your No. 50 S.—V.-10B. of the 12th March whether, "in view of the difficulty of supervising their action, and preventing authority conferred by virtue of them from being abused, it would be practicable to issue sanitary rules" for the provision of pure water, drainage, and a simple conservancy system.

2. As the Government are aware, in one district at least of this Division, an attempt was made in this direction, but, for want of continuity, without much success. Spasmodic efforts are of little use. Mr. J. Smith revived Mr. McConaghey's rules; but the departure of any Officer is sufficient warrant for the immediate disuse of any scheme he has suggested. Until the people or native officials see what the wishes of the new Officer are, no possibly useless exertion will be taken.

3. To secure continuity of action, there must be a legislative enactment, and I think officials of some sort must be employed. I distrust lambardars or other local leaders making themselves and others uncomfortable by insisting on attention to rules they do not believe in, and which they have no reason to believe will be vigorously enforced. Nowhere, I believe, has it yet been attempted to carry out any sanitation in villages where the population is less than 1,000. Lambardars are in many places with us following into desuetude, and to make them sanitary officers will be to hasten their decline.

4. It has been somewhere proposed, even if it is not already a practice, to make officers of chaukidars in rural circles. To these jamadars might be entrusted the duty of reporting inattention to sanitary rules. They have small circles, and if required to keep sanitary diaries, the condition of their circles might be seen at a glance. The supervision would still have to be left to Sub-Inspectors and Inspectors, the more especially as the time when villages should be continuously clean is during and after the rains. I have not much confidence that the duty will be efficiently performed, or that native underlings can be kept from abusing their authority. But perhaps this is not sufficient reason for standing aloof.

5. Village sites do not always stand on heights, nor will it be found possible always to drain them. The undertaking of a systematic village survey, or even the registering of the sanitary condition of each registry circle, is a gigantic work, which I do not feel myself called upon to recommend. The improvement of the supply of drinking water does seem feasible; but having for the last few years pressed the subject, especially in Banda and Allahabad, I have

learnt that here, too, serious and multifarious difficulties exist. *Pucca* wells are much more numerous than are supposed; and even where they do not exist, the zamindars are not too ready to take up the burden. Even when cleaning out, or raising or repairing the platform round, is all that is required, the same difficulties exist; and this is not only the case when the villages are in the hands of a large brotherhood, and when there may be difficulties about realizing the expenditure, but large zamindars, and even Officers administering Government villages, do not always see the advisability of initiating the heavy expenditure which attends well-sinking. Perhaps the Government might remind Officers that takavi might in many cases be advanced as fairly for wells used for drinking as for agricultural purposes.

From J. C. ROBERTSON, Esq., Commissioner, Rohilkhand Division, to the Secretary to the Government of the North-Western Provinces and Oudh,—No. 33—XX-181, dated the 25th April 1888.

I have the honour to remark that Mr. Lang, when Officiating Commissioner, circulated G. O. No. 50 S.—V.-10 B., dated 12th March 1888, amongst District Officers for an expression of their opinion as to the advisability of introducing rules for sanitation of villages in their respective districts. Five replies have been received, of which one only, *viz.*, Moradabad, is in favour of the scheme, while four condemn it. I do not understand the Government order to require the opinions of District Officers, and therefore do not forward them, but will state my own opinion regarding the proposal.

2. On the general question of conservancy, I claim considerable personal experience, having, during the nine years that I was Magistrate of Allahabad, paid much attention to the subject, and I have reason to believe, having effected some improvement on the previously existing state of things, though I do not not pretend to have achieved anything like success. When I recollect that such improvement as was effected was due to incessant daily inspections by myself or one of my covenanted staff, one of whom visited the city every day, and when I recollect that any falling off in these inspections was immediately followed by deterioration in conservancy arrangements, I think that I am justified in saying that it is absolutely impossible to introduce any system of village conservancy which will, *quâ* sanitation, be of the smallest use, without incurring enormous expense on a supervising establishment.

3. Granting, however, for the sake of argument, that the interests at stake are such as to justify expenditure on supervising establishment, I maintain that there is another matter which should be taken into consideration. It may be a fact to be regretted, but it is an undoubted fact, that the native community generally loath and detest restrictions of a sanitary nature even in towns, and it is very certain that they will not be viewed in a more popular light by ignorant villagers whose villages in many cases have never, or very rarely, been visited by an English Officer, and who will be exposed to extortion of every description if the proposed rules are introduced: for however zealous a District Officer may be, I defy him to stop extortion of this kind spread over a large area, if his subordinates wish to resort to it, and I do not suppose that any Officer of experience will deny that the "mukaddam," or by whatever name the supervising officer may be styled, will refrain from adding to his means when he has such facilities afforded as would exist under the proposed rules.

4. My contention is that there would be a minimum of success with a maximum of discontent extending all over the provinces; and on political grounds I deprecate the introduction of a system which would most certainly render our Government less popular among the whole community. I would here incidentally mention, in support of my statement, that sanitary restrictions are unpopular; that quite recently in an independent State, *viz.*, Rampur, the Nawab wished to enforce extra-mural burial, but was obliged to drop the proposal, finding the opposition too strong, though the advantages of extra-mural burial in a crowded town like Rampur are obvious. I would, in the present instance, respectfully recommend the Government to follow the example of the Nawab of Rampur.

5. In conclusion, I submit extracts from the Bijnor and Pilibhit reports, which appear to me to put the case strongly and fairly.

Bijnor.—"Lastly, I would submit, it must not be expected that the natives themselves will work or enforce any, even the simplest, sanitary rules, save under constant European supervision. I have never yet met the *lambardar, sarpanch, panch*, or municipal member, who would *proprio motū* incur the odium of compelling his neighbours to be sanitary according to rule, unless in satisfaction of some private grudge. I have yet to meet the tahsildar who would incur it, were he free from the compulsion of European supervision." That means, for any extended scheme, an increase of the European staff.

Pilibhit.—"In my humble opinion the high mortality and the ill-health of the rural population which, attract the notice of sanitary reformers, are more intimately connected with the poor

food and insufficient clothing of the small tenant and the agricultural labourer, and the conditions under which their out-door work has constantly to be done, than with manure heaps, smells, and drinking water. This is doubtless not a reason why the latter incommodities should not be lessened as far as practicable; but it is a very strong reason for deprecating any measures which would intrench on the scanty means of the ordinary cultivator."

From J. J. F. LUMSDEN, Esq., Commissioner, Benares Division, to the Secretary to Government, North-Western Provinces and Oudh,—No. 4880—XIII-149, dated the 17th May 1888.

With reference to your No. 50.S.—V.-10B., dated 12th March 1888, and its enclosure, I have the honour to submit copy of a Note embodying my views on village sanitation, which I recorded on receipt of your letter under reply.

2. After recording this Note I received spare copies of your letter and its annexure under a separate cover, from which I gathered that Government wished, not merely for an expression of my own opinion, but that the opinion of District Officers should be obtained and submitted. Spare copies of your letter and its annexures were accordingly sent to all the District Officers of the Division for an expression of their opinion. Their replies have all now been received, and I beg also to submit them in original for the information of Government.

3. I would invite special attention to the replies received from Messrs. Adams and Bullock. You will see that there is a general consensus of opinion that it is impracticable to enforce rules in these provinces similar to those which have been promulgated in the Central Provinces.

4. After reading the replies received from District Officers, I see no reason to modify the opinion recorded in my Note of the 19th March.

Copy of Commissioner's Note on Secretary to Government's No. 50S.—V.-10B, dated the 12th March 1888.

There is no provision in the North-Western Provinces Land-Revenue Act which would admit of such rules as have been introduced in the Central Provinces being put in force in the North-Western Provinces.

2. Neither is there any provision in the Local Boards' Act which would allow of such rules being promulgated and *enforced*. I presume, therefore, if action were taken in the direction indicated in these provinces, legislation would be necessary.

3. The above by way of preliminary remarks.

4. As to the feasibility of working such rules, could they be legally promulgated? Compliance with the rules, laid down in Notification No. 4784, dated 7th December 1885, ought not to involve any serious inconvenience or trouble to the people, if they would unite to give effect to them.

5. These rules, however, would be of little practical use, as experience showed in the Central Provinces, unless the further set of rules under which action could be taken to enforce their provision was also introduced, and it is in connection with the procedure to be followed in enforcing these simple rules that we are confronted with all sorts of difficulties.

6. The Central Provinces rules refer to the "mukaddam," as if there were a single individual in each village on whom the duties and responsibilities referred to in the rules would devolve. This may be the case in the Central Provinces, but the situation is different in these provinces; and, apart from other difficulties in the way of enforcing such rules, the absence of any one responsible person, on whom the responsibilites and duties could be imposed, would greatly enhance these difficulties.

7. In the eastern districts the lambardari system has not much real vitality, its existence can only be preserved by increasing the number of lambardars, and in most villages there is at present a considerable number of lambardars. If the duties and responsibilities imposed on the "mukaddams" in the Central Provinces were imposed on the village lambardars, the multiplicity of the responsible agents in a village would give rise to difficulties which would not be felt where there existed a *single* individual with the requisite position and influence among the village community. Moreover, to impose such duties and responsibilities on our lambardars, and enforce them, would probably render the office still more unpopular, and hasten the final and complete collapse of the lambardari system.

8. The power given to the "mukaddam," or whoever might take his place in these provinces, under Rule 1, Notification No. 4785, is very great. If the rules were worked effectively, the number of applications to District Officers under Rule I would be very numerous, and each application would involve an inquiry. No officer of lower position than a tahsildar or naib tahsildar could safely be entrusted to carry out such inquiry, and I conceive the amount

of work thrown on these officials and other officers of a higher grade would be enormous, if the rules were at all actively enforced.

9. Inquiries under Rules II and III would also be numerous, and I presume much extra work would arise from supervising the carrying out of works by the "mukaddams" under Rule III (*c*), and the payment and working of establishments under Rule III, for "mukaddams," or, in these provinces, lambardars, could hardly, I conceive, be authorized to collect the cost of establishment or funds to defray works, and left entirely free of supervision in the disbursement of these funds or the execution of the necessary works.

10. Moreover, as a general rule, I do not believe that the initiation would be taken by the lambardars; and that if any such rules are to be enforced in these provinces, they must provide for the initiation being taken by the District Officer. The general introduction of such rules in a district would throw a vast amount of additional work on the District Officer and his staff, who are already overburdened, even if a special subordinate establishment was entertained for detailed local inspection and supervision: for if abuses are to be prevented, very detailed supervision by the District Officer and his staff would be necessary.

11. In my opinion the general introduction of such duties is not practicable, unless in each district a highly paid official were appointed to supervise their working and prevent the abuse of authority under them.

12. It might be possible, however, in Act XX towns and selected villages belonging to single proprietors or small bodies of proprietors—men of position and influence, whose sympathy with the object in view and whose co-operation in carrying out the rules could be relied on—to do a good deal in the directions indicated in improving the sanitary condition of such towns and villages; and, at the outset, action should, in my opinion, be limited to such towns and selected villages.

13. Special rules would be required for Act XX towns, under which the Magistrate's assistant in charge of the administration of these towns should be given the power of the "mukaddams" under the Central Provinces Rules.

14. To introduce such rules to a limited extent in the manner I have indicated, would not, I think, give rise to very much work, and no additional expenditure would be necessary, while it would at the same time be possible to prevent any serious abuse of authority under them.

15. Improved village sanitation is an admirable thing; but the difficulties in the way of doing anything effective, unless Government is prepared to undertake the cost of an expensive establishment, appear to me at present insuperable; and so long as many of the large towns, including those administered under the Municipal Act, are in such an unsatisfactory state as regards sanitation, conservancy, and water-supply, I am of opinion that our effort should be mainly confined to bringing about an improved state of things in these towns.

16. Much more could be done in this way than is done at present in many of these towns. The necessary provision having been made for police and the maintenance of existing roads and municipal buildings, I am of opinion that expenditure on local improvements by Municipal Boards, such as opening out new roads, constructing town halls and clock-towers, &c., should not be sanctioned until the Municipality has established a proper system of conservancy and water-supply, and that all available funds should be devoted to works connected with the latter.

BENARES;
The 19th April 1888.

J. J. F. LUMSDEN,
Commissioner.

From G. ADAMS, Esq., Magistrate of Benares, to the Commissioner, Benares Division,—No. 3—XX-4, dated Benares, the 2nd April 1888.

I have the honour to acknowledge your No. 2510—XIII-149 of 22nd March 1888 with enclosures.

2. I have often, as District Officer, had occasion to consider the possibility of enforcing any rules for general village sanitation, and I have always come to the conclusion that it is practically impossible.

3. If the enforcement of such rules were anywhere practicable, it would be in the thinly-inhabited districts of India; but from the correspondence enclosed with your docket under reply, the attempt seems to have failed in the Central Provinces, while I understand that, in Banda, where rules of the kind were once introduced, it was not found possible to enforce them properly.

4. The difficulties which attend the working of such rules, in a thinly-populated district, would be felt much more in such a district as this.

5. I most fully admit the desirability of a pure water-supply, good drainage, and a simple conservancy system for every village in India; but I cannot admit the possibility of putting

rural India, which is practically in what corresponds to our 13th century in a better condition than rural England in the last quarter of the 19th century.

6. The time is not yet come for attacking the insanitary condition of the villages, and I would represent that the work may very well stand over until the sanitation of the towns has been established.

7. I think that an attempt to enforce any such rules at present, or for a long time to come, would lead to little more than the endless worrying of the people and to the filling of the pockets of the subordinate police and revenue chaprasis.

8. The people are not educated as yet to the point of understanding the desirability of the objects to be aimed at, save in a minor degree as to one point to which I will refer later; and an attempt to coerce them would be a grave administrative error. What the villager wants most particularly is to be let alone; and under such rules, if they were carried out, he would be perpetually interfered with.

9. I feel certain they would not be carried out. Continuous pressure could only be applied through the small zamindar and the chaukidar, and I am perfectly certain that they would not carry it on. They might occasionally persecute people who were obnoxious to them; but they would not exert themselves against the passive resistance of their general public. If they were so unwise they would in many places repent it, for the passive resistance would become active, with results more unpleasant than any punishment likely to be inflicted for neglect of duty by the authorities. For the last three years I have had close experience of the working of the Conservancy Department in the Benares Municipality, where the conditions are infinitely more favourable than they could be in rural life. Yet with a fairly strong conservancy establishment, with constant supervision by European officers, and with the support of the upper classes, the rebellion of the mass of the people against such sanitary rules as are enforced here is still in a great degree successful.

10. To the mass of the people sanitation is foolishness; witness the complaints of many persons when, during the last attack of cholera here, I prevented them from drawing water at the mouths of the great sewers which empty themselves into the Ganges. When the mass of the people have attained to even such appreciation of sanitation as the upper classes have now, the working of such rules, as are proposed, will be feasible, but not before.

11. "Pure water, drainage, and a simple conservancy system" do not read as if much was required to provide them; but the work, even if the rules applied to only a small portion of each district, would be of no little magnitude and difficulty.

12. The drainage of a village is not a small matter in practice. Take an average village. Probably a considerable portion of the narrow lanes which run between the houses are so bad that, after rain, they are pools of foul water. These must be raised and filled in with earth, provision being made at the same time that, in so doing, the water shall not be directed into the houses of the villagers.

13. If the surface rain-water is allowed to run at will over the lanes and roads, they will be cut up, and the direction of the drainage will be changed and the system destroyed. Drainage channels of some kind must, therefore, be provided, and as the narrowness of most of the lanes will not allow of side drains, there must be a centre gutter, which gutter must be of masonry, or be metalled, or it would be very quickly obliterated by the trampling of the cattle as they go to and fro daily.

14. The water must be taken to a distance from the village site; for if there be any reliance on sanitary science, the fetid tanks which immediately adjoin most villages are the most fecund source of disease. These must, therefore, be filled up, and a new tank dug at a distance to receive the drainage.

15. All this will cost on an average several hundreds of rupees for each village or hamlet. This will be the initial cost, but more money will be required annually for repairs, unless they are to be executed by a system of *corvée*. I do not see how the money is to be raised locally, without immensely increasing the local taxation.

16. Further, Government would have to meet the cost of a professional survey in the first instance, and of more or less professional supervision of repairs annually; for the present staff at the disposal of the Local Boards is sufficient only for the present amount of work. When the drainage of all the villages of a district had been completed, the work of supervision alone would be no light duty.

17. If all the work be done, and done thoroughly, we should have model villages, better than most English villages, and we should also have a thoroughly discontented village population, unless, of course, none of the cost fell on them, which seems improbable.

18. As to conservancy, I presume that rules similar to those issued by the Central Provinces Government are intended. The circumstances, it may be noted, of the villages of Central India and of those of these provinces differ a good deal.

19. The "mukaddam" would be represented here by the lambardar, if he exists, which in this division is not usually the case. Elsewhere he very often is non-resident, so that in a very large number of villages some other machinery would be necessary. Considering that in a large proportion of the villages of any size in these provinces the inhabitants are divided into opposed factions, it would be most difficult to appoint any head man who would work fairly, not favouring his friends or oppressing his enemies.

20. The rule as to persons going at least 100 yards from the houses to obey the calls of nature is theoretically an excellent one, but in practice it would not and could not be enforced with any strictness.

21. The removal of rubbish from the lanes and open spaces means, of necessity, the entertainment of a sweeping staff and more taxation, with the result that the village would be swept only when there was a chance of an officer of rank visiting it.

22. The removal of manure to a 100 yards at least from the village means a good deal more. Manure is a valuable commodity, and would promptly be stolen.

23. The Sanitary Commissioner has not, I think, taken note of the manner in which in many parts of these provinces the villages are splitting up. The villagers in old days clustered together for mutual protection; but now they find they can live close to their fields; and hamlets have sprung up all over the country.

24. Any reliance on the members of Local Boards for the supervision of the working of such rules would be futile. Anything done would be done by the direct action of the District Officer and his superior staff, and they mostly have more to do already than they can get through properly.

25. Lastly, I would ask whether the necessity for interference has not been greatly exaggerated. Sufficient allowance is not made for "habit." For instance, the heart of the city of Benares is in a condition to which the sanitary state of the worst villages in India is cleanliness itself; yet the people who live there are healthy. Where the townsman has the advantage over the villager is, that he is much better fed. I submit that the funds of the State and the energy of its officers may be better spent in providing means by which the peasantry may supply themselves with sufficient food than in worrying them with rules, the sense of which is beyond their understanding, and turning their indifference into resentment against the Government.

26. I have said that there is one point in such rules as are under consideration which is not beyond agricultural intelligence. The people appreciate good water, though they will take little trouble to get it; and if anything be done, it should be in the direction of preventing the pollution of well water. But this, too, means the spending of a good deal of money, and in the present condition of things is not worth enhanced taxation in any shape.

27. To sum up briefly, I am strongly of opinion that it would be quite impossible to so supervise the action of rules for village sanitation as to prevent the authority given under them from being abused, and that, apart from any consideration of the effect of enhanced taxation, an attempt to work them, without perfect supervision, would cause very grave discontent among the agricultural population.

From D. T. ROBERTS, Esq., Collector and Magistrate of Gorakhpur, to the Commissioner, Benares Division,—No. 369, dated Gorakhpur, the 28th March 1888.

In reply to your Circular No. 2510—XIII-149, dated 22nd March 1888, I have the honour to report my opinion as follows.

2. I think it practicable and advisable to take coercive measures to keep pure the drinking water in villages where that supply is from wells; and power might be given to enforce in these provinces Rule I (*a*) of Notification No. 4784, dated 7th December 1885, of the Central Provinces.

3. Further than this I consider it most unadvisable to go at present; and I consider that any attempt to make conservancy arrangements in villages would be futile; and if such arrangements were coercive and under the control of the police, nothing but needless harassment and extortion would result. Even in municipalities it is very difficult to maintain a proper conservancy, and what is done is entirely due to the exertions of European officers who take an interest in the matter. Native members are almost always apathetic, and are themselves as great sinners in respect of bad conservancy as the rest of the community.

4. But in the case of wells, it is different. The sentiment of the people supports the purification of drinking wells and their preservation from contamination, and they do a great deal for themselves in the way of making good wells and preserving them. A list of the drinking

wells in villages could easily be drawn up by the patwaris; the owners of the wells would attend to orders given about them, and would be glad of the support of the Government to keep them pure and clean. Ownerless wells could be cleaned out and repaired at the cost of the community using them. District Officers often effect this much by mere personal influence.

5. The only expense attending this rule would be the employment of some muharrirs to keep up the list of wells, issue notices, &c., and receive the reports of the patwaris.

From F. S. BULLOCK, Esq., Officiating Magistrate of Basti, to the Commissioner, Benares Division,—No. 181—XX-21, dated Basti, the 28th March 1888.

I have the honour to acknowledge the receipt of your Circular No. 2510—XIII-149, dated 22nd March 1888, forwarding, for my opinion, G. O. Circular No. 50 S.—V-10 B. of March 12th 1888, and its enclosures.

2. I have carefully considered the rules framed by Mr. Crosthwaite under Act XVIII of 1881, with a view to the improvement of village sanitation. They are two-fold: *First*, four simple rules to regulate village sanitation. *Secondly*, rules to enforce the above through the agency of the village "mukaddam."

3. The first point that strikes me is that in these provinces we have no one corresponding to the "mukaddam" of the Central Provinces, and that, therefore, our agency must be different. The "lambardar" of the village under our revenue system cannot for a moment be compared with the "mukaddam" under the ryotwari system. He has no authority, and daily his influence is growing less, and in many districts a lambardar is a merely nominal designation to which no attributes can be attached. Now a "mukaddam" in the Central Provinces has considerable influence and power, and yet, so far as can be seen, even his agency has been ineffectual in enforcing the simple rules framed by Mr. Crosthwaite.

The first difficulty lies in the machinery for enforcing any rules, however simple they may be, and in so doing to avoid the abuse of authority conferred under them.

In these provinces almost the only effective agency for enforcing rules at our disposal is the police; and I cannot bring myself to believe that it would be possible to make use of the police for purposes of sanitation, without running the risk of oppression and annoyance.

The District Boards have at present no working influence; and until local self-government has developed to an extent of which I see no signs of promise at present, they will be absolutely useless for the purpose. I think that, before entering upon a task such as this, the magnitude of which may be estimated only if we consider that it is no less than the complete reformation of the habits and customs engendered in a people during countless generations and closely connected with their religious and domestic observances, we ought to have "a very clear perception of what ought to be done," before we undertake to find "an efficient agency for doing it."

The simple rules which form Mr. Crosthwaite's instructions are merely the enunciation of principles of sanitation—

(1) to provide a source for the supply of pure water;

(2) to keep the air pure in the neighbourhood of habitations—

comprise the elementary axioms of sanitation, and we may almost give the natives of India credit for a knowledge of these principles.

But whether it is solely, or even principally, owing to the want of attention to these principles that the sanitary condition of the rural population in India is below the average of other countries, may well be open to doubt.

The want of such simple hygienic methods as relate to clothing, diet, and ventilation may, for all we know in the absence of scientific inquiry, have more to do with the health of the people than the supposed pollution of air and water in villages.

I think that, as a preliminary to any action such as has been proposed, a systematic and scientific inquiry ought to be made into the subject, with a view to ascertaining the causes of the spread of epidemic or malarial disease, and with the purpose of verifying whether the state of rural sanitation is to be attributed partly or entirely to the habits of the people, or whether it is rather the result of climatic and hygienic conditions over which our control can at best be but weak and inefficient.

I cannot believe that in small rural villages the state of sanitation is likely to be much improved or affected by such rules as those that have been experimentally devised in the Central Provinces; and the friction and abuses likely to be engendered by the strict enforcement of such rules would be so great, that nothing but the most urgent necessity would, in my opinion, warrant their introduction.

In making these observations I would of course confine them to the subject of rural sanitation, and not to towns and cities. In the case of towns in which population is large, the danger from impurity of water and air increases in proportion to the size and density of the inhabited

site, and it is absolutely necessary to provide for the disposal of rubbish or filth, and to insist on the cleanliness of drains and the protection of wells. With regard to these, I think much remains to be done, and stricter rules regarding the purity of domestic habitations and private wells might well be introduced, and greater authority conferred on District Boards and Magistrates for their enforcement. But as I understand the problem of village sanitation to form the subject of the present inquiry, I leave this out of consideration. During the cold weather I have thought a good deal on the subject of village sanitation, and have made a good many observations and inquiries into the matter, with a somewhat unsatisfactory result.

The four rules framed by Mr. Crosthwaite deal with the superficial and patent insanitary conditions that strike any European who first visits an Indian village; but it must be remembered that these conditions are a part of the natural life of the native, to which he has become, as it were, inoculated by time and habit, and that to overcome them by any rules is to make him a new man with the ideas and senses born of civilization. To enforce such rules by any native agency, such as is to be obtained in these villages, is next door to impossible. If the task is to be undertaken at all, I think it should be done after a very clear appreciation of the value of the measures and the difficulties attending it. That we are at present in a position to state positively that village sanitation would be improved to an extent that would warrant our interference in the habits of the people in the manner proposed, I much doubt.

It is easy to say that only one or more wells must be used for drinking purposes, and that they must not be used for washing or bathing, &c.; but in a hot and thirsty land such a rule may become an instrument of tyranny. A mark may be made to indicate the limit within which a call of nature must not be answered; but in the early hours of morning, or the darkness of the night, such a mark may well be ignored.

To say that a village site is to be kept clean is as easy as to "call spirits from the vasty deep." But will the village site be clean?

The rules are good in themselves; but in my opinion the agency for enforcing them, without abuse and oppression, is wanting; and, moreover, I do not feel sure that the rules, if carried out, would bring about the result which is contemplated.

In point of fact the rules seem to me to be essentially the work of an amateur dealing with the superficial aspects of a case, without the knowledge or necessary experience required to treat it scientifically. I think we require a scientific inquiry, conducted by qualified sanitary authorities, into the subject, before we attempt to introduce crude reforms which strike at the very root of native usage and customs, the product of centuries.

From G. DALE, Esq., Magistrate of Mirzapur, to the Commissioner, Benares Division,—No 566,—XX dated Mirzapur, the—April 1888.

I have the honour to reply to your Circular No. 2510—XIII-149, dated 22nd March 1888, forwarding copies of Secretary to Government, North-Western Provinces and Oudh, letter No. 50 S.—V.-10 B., dated 12th March 1888.

2. I am decidedly of opinion that it would be utterly useless to promulgate any sanitary rules whatever, unless the district authorities are given full legal authority to enforce them.

3. It is no use mincing matters in dealing with a problem of such a difficult nature as is the question of village sanitation. To begin with, it must be frankly admitted that the rural population of India have literally no ideas of sanitation, and, what is worse, no desire for sanitation. The spread of education has made absolutely no impression upon the people at large, as evidenced by any greater regard on their part to cleanliness, or a desire to emancipate themselves from the filth and squalor in which their forefathers were content to live. This being so, it is simply idle to suppose that District Boards or District Officers can, by mere advice or influence, succeed in improving the present condition of things.

4. The ignorance and apathy of the people in sanitary matters is too gross to give way to gentle admonitions or persuasive precepts. If any real sanitary reform is to be made, sanitation must be forced upon the people; and, unless the Government are prepared to encounter a most heavy expenditure, this compulsory sanitation must be made self-supporting.

5. That such a course would be most unpopular throughout the country, and prove a source of extreme annoyance to the people, goes, I think, without saying: and therefore I hesitate to recommend legislation; but at the same time I am convinced that, without it, no real progress will be made.

6. It was not so very long ago the principle was enunciated that legislative interference in regard to sanitary matters should not be initiated until the objects of sanitary reforms were more generally understood. I do not think that that time has yet arrived, nor is likely to arrive for many a long year to come. The question, however, is—when are the objects of

sanitary reform likely to become more generally understood? Would it not be advisable, by some mild legislative measures, to compel the people to learn to appreciate the benefits of sanitation, instead of waiting for them to educate themselves up to the desired point?

7. In this view I am inclined to advocate the passing of a Sanitation Act, giving power to the Local Government to frame rules for the improvement of the sanitary condition of villages, and making disobedience to the rules punishable by fine on summary conviction before a Magistrate. The Act should be extended to such villages or areas as the Local Government may from time to time direct by Notification in the Gazette. The rules to be framed should be of a simple character, something on the lines of the rules framed by the Chief Commissioner, Central Provinces, under section 14 (*e*) of Act XVIII of 1881.

8. I shall feel inclined to extend the Act and Rules at first only to the large villages in any district, say to those containing over 1,000 inhabitants. This would, in the Mirzapur District, according to the Census Returns, mean about 110 villages, *viz.*—

Mirzapur	49	villages
Chunar	18	„
Robert-ganj	14	„
Family Domains	29	„

9. Every village brought under the Act would be liable to a house-tax assessment. The assessment to be made and the tax realized by a *panchâyet* of at least four respectable inhabitants of the village, to be nominated by the district authorities. The *panchâyet* would be held responsible for the realization of the tax, the cleanliness of their respective villages, and would have authority to direct compliance with the sanitary rules.

10. From the proceeds of the tax I should make the *panchâyet* appoint a proper number of sweepers, and, as far as possible, pay for any necessary sanitation works. All fines imposed under the Act might be credited to the sanitation fund of the village in which the fine was inflicted.

11. Disobedience to the sanitary rules, or failure to comply with the orders of the *panchâyet* directing compliance therewith, would be reported by the village chaukidar of the nearest police thana. To prevent abuses, no such report should be received by the police, unless made under the written authority of at least two members of the *panchâyet*, or of the Sanitary Inspector hereinafter to be mentioned.

12. The general supervision of the working of the rules should be entrusted to the Sanitation Department.

13. A Sanitary Inspector should be appointed for each division (at first) at the cost of Government, say on Rs. 20 to Rs. 25 a month. His sole duty would be to move about his division and visit all towns brought under the Act, suggest any sanitary improvements, and bring to the notice of the district authorities all shortcomings on the part of either the villagers or *panchâyets*, and so enable the District Officers, through the Tahsildars or District Boards, to exert their influence, and exercise their authority where most needed, and to punish disobedience where shewn to be wilful and determined.

14. Now the objections to a scheme of this sort are many and serious:—

Firstly—There is its intense unpopularity to be considered, and the discontent which its introduction would be sure to create;

Secondly—There can be no doubt it would throw an enormous amount of extra labour upon an already over-taxed district staff;

Thirdly—There remains the lurking suspicion whether, after all, the sanitary measures, thus carried out with such difficulty, would have any appreciable effect in contending against the climatic conditions of the country, and in improving the national bill of health.

From W. J. GUTHRIE, Esq., Officiating Magistrate of Ghazipur, to the Commissioner, Benares Division,—No. 973—XVII, dated Ghazipur, the 10th May 1888.

In reply to your No. 2510—XIII-149, forwarding copy of letter No. 50 S.—V-10 B. dated 12th March 1888, from the Secretary to the Government, North-Western Provinces and Oudh, I have the honour to reply that, in my opinion, it might be practicable to issue rules regarding sanitation in the spirit of the instructions of the Government of India, but only in a very limited way. I believe the general introduction, throughout the district, of sanitary rules involving a punishment, to be for several reasons perfectly impracticable. The main obstacle is, of course, the impossibility of changing, by such rules, village customs, which are of such long standing as to be now observed almost as a religion. *Secondly*, there is no existing establishment

by which supervision could be exercised. My experience of the action of municipal town chaukidars convinces me that to give village chaukidars any power under sanitary rules would be an unmitigated evil; and, further, Dusadh chaukidars are usually leading offenders against sanitation, from their habits of keeping pigs. Vaccinators could not be employed in this work, as supervision on their part would increase the unpopularity with which they are already regarded, and thus prove fatal to their legitimate work. The only other official found in every village or small group of villages is the patwari, and I would hesitate before giving one so generally under the influence of the zamindars any further power. What I have said of vaccinators applies to schoolmasters. *Thirdly*, native public opinion is undoubtedly opposed to the punishment of breaches of sanitary rules, and I believe that the judicial work necessary to carry out such rules would be most distasteful to the bulk of the Honorary Magistrates, who would necessarily have to try cases of breach of the rules. *Fourthly*, the cost of introducing general rules would be prohibitive, for the simple reason that Sanitary Inspectors would have to be well paid to prevent their abusing their authority for their pecuniary advantage.

I should not be opposed, however, to a proposal to give the District Magistrate, and such Subordinate Magistrate as the District Magistrate thinks fit, increased power to enforce sanitation, but only on certain distinct lines laid down by recognized authorities on sanitation. Views held by District Officers about sanitation are so conflicting, that it would be necessary to lay down certain general rules for their direction. I would be inclined to go as far as to give such Magistrates as I have referred to above, powers to punish summarily cases of wilful disobedience to their own specific sanitary directions. I would also recommend that District Magistrates should be given increased power to start conservancy establishments in the larger villages, and to defray the cost by a local tax.

I feel unable to recommend any further extension of the powers of District or Local Boards in sanitary matters. The powers at present possessed are not abused: they are simply not exercised, or, if exercised, only to a limited extent; and I think there is nothing remarkable in this being the case, for it is difficult to see what incentive there is to make any member show energy in sanitary matters.

I have indicated above that, in my opinion, the only direction in which at present improvement in sanitary matters can be made is by giving the District Magistrate increased, but strictly circumscribed, powers. It is obviously impossible that he could do much single-handed; but I am hardly prepared to offer suggestions as to the way in which he should be assisted in enforcing sanitation. Possibly an increase in the staff of supervisor kanungos, accompanied by a corresponding contraction of their circles, might allow kanungos to undertake the duties of Sanitary Inspectors in addition to their present duties. There is also undoubtedly room for improvement in the present relations between Departmental Sanitary Commissioners and Civil Surgeons and the district authorities. The circles of the former are also manifestly too large. In the event of any new rules about sanitation being issued, it would be necessary to define clearly their position in relation to the District Officer, and to so arrange that their experience and advice should be readily available to the executive in sanitary matters.

From H. B. J. BATEMAN, Esq., Officiating Magistrate and Collector of Azamgarh, to the Commissioner, Benares Division,—No. 274—XX-4, dated Azamgarh, the 4th May 1888.

In accordance with your Circular No. 2510—XIII-149, dated 22nd March last, I have the honour to report, that considering the tahsil officials, kanungos, &c., have already enough work to occupy their time, and considering the extent even of a supervisor kanungo's halka, it would seem absurd to impose any work of the sort on them.

2. It would seem inadvisable to confer more powers on the police and chaukidars than they at present possess in this matter. The police do sometimes in some districts report matters of great insanitary importance, and also wells that are level with the ground and are liable to form traps to people passing by in the dark, and orders are issued under section 144, Criminal Procedure Code. However, there would seem very good reasons for not encouraging either the police or the chaukidars to be too zealous in a matter which perhaps they might find more lucrative to themselves than any other branch of their work.

3. It would seem that in the Central Provinces the matter is entrusted to the "mukkadam," who, I suppose, is a somewhat analogous person to a lambardar in these provinces. As regards this district, the lambardar exists only in name. Practically he seldom collects any rents except his own share, and socially he is nobody. I consequently fail to see to whom such village sanitary supervision could be entrusted. The patwari would seem most unfitted for such work.

4. As regards the rules themselves as proposed by the Chief Commissioner, Central Provinces, they would seem to be most beneficial as far as they are applicable to this district; but

it would seem impossible to enforce any of them in a district like this, where the zamindars are poor generally, without opening the door to an untold amount of corruption.

5. I have not been in camp in this district myself, but from what I have seen, and from what I am told by Shah Zahir Alam, Deputy Collector, to whom Mr. Whalley referred this matter for report, it would seem that there is less necessity for any such rules in these parts than there is, say, in the Bareilly Division. In this district large ábádís are few, and the people live in isolated purwas, instead of in one large ábádí for each two or three or more square miles of cultivation.

From F. B. MULOCK, Officiating Collector and Magistrate of Ballia, to the Commissioner, Benares Division,—No. 147, dated the 26th April 1888.

With reference to his Circular No. 2510—XIII-149, dated 22nd ultimo, has the honour to forward a Memorandum, containing undersigned's views on the subject of village sanitation.

MEMORANDUM.

The insanitary condition of village communities in India is, as far as I know, chiefly due to three causes—

(1) the storage of manure within the village site ;
(2) the existence of pits and ponds filled with filthy water in and around the village site ;
(3) impure drinking water.

The first two causes it would be most difficult to deal with. To compel the storage of manure outside the village site presupposes a sanitary staff that does not exist, and which, if it did, would be a curse to the country, as it would be impossible to check the malpractices of the many underlings employed. To fill up the pits and ponds full of foul and tainted water around village sites would be a work of immense expense. But I see no such difficulties in the way of vastly improving the supply of drinking water by cleaning the wells used for the purpose once a year. Lists of drinking wells in use inside each circle could be easily prepared by the patwaris, and should be filed in every tahsili. An order to the owner or zamindars of each particular village would in many instances be sufficient to have the wells cleaned ; but it would be necessary that the Magistrate should be invested with powers to punish in case of recusancy. I would add, however, that the absence of lambardars, in the real sense of the term, in the eastern districts of these provinces, will render it more difficult to enforce sanitary rules ; but this can be overcome by dealing with the zamindars themselves directly. A Sanitary Inspector on Rs. 30 a month should be appointed in each tahsili, and his duties would consist in reporting on the condition of the *wells* in his circle to begin with. Many of the wells whose waters are habitually used for drinking purposes should be closed for good and all, as they will be found hopelessly impure and tainted ; whilst many more should be raised at the mouth to prevent sewage flowing in, or otherwise improved. The difficulty at present lies in the fact that there is no recognized officer, such as the Sanitary Inspector I propose, through whom touch can be kept with the sanitary condition of the country. He could be employed to see executive orders carried out, and I don't see why patwaris should not also report on the well-cleaning in their circles at their monthly visit to the tahsili. The expenditure in pay of the three Inspectors necessary for this district would be Rs. 1,080 per annum, which might be defrayed from the funds at the disposal of the District Board. In time I have no doubt that a sanitary cess will be necessary. Sanitation is a legitimate "village expense," and a very trifling addition to the village expenses, now collected from each tenant along with the rent, would afford sufficient funds. The above are, roughly speaking, the lines on which I consider action might be taken. I would not recommend that the present vaccination establishment be employed in this work. They are fully employed as it is. I submit for Commissioner's perusal, as being perhaps more readable than this Memorandum, a leading article from the *Pioneer* newspaper, in which I endeavoured to express my views on the subject of village sanitation.

F. B. MULOCK,
Officiating Collector.

Extract from Pioneer, *dated the 11th November 1887.*

THE BASIS OF SANITARY REFORM—Replying to one of the numerous addresses presented to him in the course of his just completed tour, Lord Connemara was led to quote and endorse a recent remark in the *Pioneer*, to the effect that the time is not far distant, if it is not actually at hand, when the force of public opinion will compel the Government of this country to take

such measures as may be necessary to remove the stigma now attaching to the name of India in questions of sanitation. A distinguished hygienist recently gave accurate expression to the general opinion in Europe, when he described the present condition of India as a standing menace to the public health of the world. It is an unpleasant fact for residents of India, but one there is no blinking, that to this country and traffic with it, through the Suez Canal, have been unanimously attributed the outbreaks of cholera now of annual occurrence along the Mediterranean seaboard.

Few, however, of those acquainted with the conditions of native life will endorse the sanguine view expressed at the Vienna Congress by a leading German medical authority, that it would be feasible to stamp epidemic cholera out of the world if the municipalities of India were compelled by law to take proper sanitary measures for the protection of the health of those residing within their limits. As a matter of fact, and (owing no doubt to such sanitary precautions as the Municipal Boards of this country have already found means to adopt) it is not, as a rule, within the boundaries of our large towns that cholera rages at its worst. There may be exceptions to this rule; but under any circumstances the enforcement of such sanitary measures as may be necessary is a matter of comparative ease in towns provided with a sanitary staff and possessing sufficient credit in the money market to borrow whatever funds may be required for the construction of works essential to the public health. It is the great mass of village communities lying outside the pale of sanitary laws that offer a far more serious obstacle to efficient reform. It is in these that the annual visitation of cholera in every district of these provinces first makes its appearance; and it is here that sanitation, utterly ignored hitherto, must begin, if we are ever to think of making a serious impression on the average mortality of the country. The unhealthy condition of agricultural communities in India is mainly due to three causes: *firstly*, the storing of manure and refuse within the village site: *secondly*, the accumulation of foul water in cess-pools around and inside the village; and, *thirdly*, impure drinking water. But these evils, so obvious to see and so easy to state, will be extraordinarily difficult to remove. Putting aside the present want of any agency for the work, and the enormous dead weight of ignorance and apathy it would have to contend against, the difficulties standing in the way of improvement are immense, if not insuperable. For instance, it has been suggested, a means of cleansing the villages would be found in the removal by the owners of all manure to an appointed spot situated at some distance from the inhabited portion of the village; and so it would. But questions of ownership in the stuff so heaped together, and of such great value to agriculturists, would lead to endless disputes. And then we get back again the radical objections to any scheme of this nature—the impossibility of enforcing it without the exercise of constant supervision. And how are we to supervise some two hundred millions of people?

Everyone, again, is familiar with the festering cess-pools of stinking water, seething with every form of putrid matter, that are to be seen around and in the midst of the ordinary native village. Out of the earth removed from these the village itself has risen, and it may be truly said that in many cases a native, whilst building his house, unconsciously digs his grave. The filling up or draining of these, on any considerable scale, would be a work of impossible magnitude, and we will at once dismiss the idea as impracticable. No such difficulty, however, lies in the way of removing, to a great extent, the third and most fruitful source of disease above named, *viz.*, impure drinking water. It is, we hold, perfectly feasible to have the drinking wells in each district cleaned, if not every year, then, at least, every alternate year. Lists of all such wells could be prepared by patwaris for their circles, and should be kept in the tahsils. In nine cases out of every ten the Magistrate's order to the zamindar, or owner of the well, would be sufficient to insure its being cleaned, and cases of non-compliance could be reported by the patwari at his monthly visits to the tahsil. In order to secure more efficient supervision, we would suggest the appointment of a Sanitary Inspector, on, say, Rs. 30 a month, to each tahsili, who should be always on tour and whose single visit to a village in the year would be sufficient to verify the fact whether the drinking wells had been cleaned or not; for there is no mistaking the heap of black and fetid ooze, filled with broken potsherds, lying at the mouth of a well but lately cleaned. It would be the duty, moreover, of this official to report all cases of drinking wells requiring protection at the mouth, so as to prevent the contamination of the water by surface drainage. All these and matters of a like nature would be included in the sphere of his duties. His pay could be defrayed by the District Board which, as at present constituted, has, strange to say, no concern whatever with matters sanitary. Towns in which Act XX of 1856 is in force might also contribute their quota, as they already do in the case of vaccinators employed outside their limits.

There is no insuperable difficulty in introducing a scheme somewhat on these lines, and not the least amongst its merits would be the fact that it would have the support of native public opinion; for the people of the country, so strangely apathetic about every other means of health,

thoroughly appreciate pure drinking water when supplied to them by Nature. We venture to predict that, in the great majority of villages, gangs of volunteers would be easily found ready, once a year, to help with willing hands to clean their drinking wells; but should the general introduction of the system give rise to friction, a single section, added to the Statute Book, giving Magistrates power to issue an order directing zamindars to clean their drinking wells, and to enforce it by a slight punishment, should they not obey, would do all that is needful. If, by means such as these, or any other it may be deemed advisable to adopt, even 80 per cent. of the drinking wells in use throughout the country were to be annually cleaned, the improvement in the sanitary condition of the people would be assuredly immense.

From Brigade-Surgeon J. RICHARDSON, Sanitary Commissioner of the North-Western Provinces and Oudh, to the Secretary to the Government of the North-Western Provinces and Oudh.—No. 75-C., dated the 20th May 1888.

I have the honour to acknowledge the receipt of your No. 50S.—V.-10B., Sanitation Department, dated Allahabad, the 12th March 1888.

2. Before offering an opinion as to "whether, more especially in view of the difficulty of supervising their action and preventing authority conferred by virtue of them from being abused, it would be practicable to issue rules in the spirit of the instructions of the Government of India," I addressed a letter, a copy of which is enclosed, to the three Deputy Sanitary Commissioners, asking them for an expression of their views on the subject of village sanitation. I have received their replies, and herewith submit copies of them. Generally, the views of the Deputy Sanitary Commissioners agree with my own.

3. I consider that it would be practicable to issue rules in the spirit of the instructions of the Government of India, which might be made applicable to these provinces. These rules would have for their object—

I—the introduction into villages of a simple conservancy system;
II—the provision of pure water;
III—drainage.

I have put conservancy first, as it secures, to a great extent, the second.

4. Rule III, given in Notification No. 4784, dated 7th December 1885, issued under section 141(*e*) of Act XVIII of 1881, the Central Provinces Land-Revenue Act, would, in my opinion, if brought into operation, suffice to secure village sites being kept reasonably clean. The rule is similar to that which was found to work so efficiently in the Banda District, during the years that Mr. McConaghey was Collector of that district.

5. Rule I of the rules issued for the Central Provinces would provide for a pure water-supply; but the rule might perhaps be somewhat shortened. Clauses (b) and (c) would hardly be required for these Provinces, in which almost all of the villages obtain their drinking water from wells. Enforcement of the rule relating to conservancy would suffice to preserve cleanliness of the banks of rivers and tanks.

6. As remarked by Dr. Jameson, drainage to be effectual must, in the case of many villages and the tracts of country in which they lie, be more than local, and be carried out under the advice and supervision of Engineers. The code of rules for the Central Provinces does not include a rule for securing efficient village drainage. The majority of village sites in these Provinces, being almost on a dead level, drainage of them would be no easy matter, and rules for effecting it would be difficult to devise.

7. The agencies employed to report upon the sanitary state of villages might include, besides the village watchmen and the patwaris, the Officers of the Sanitary Department, District Magistrates of all grades, and Honorary Magistrates, the Civil Surgeon and the District Superintendent of Police, Tahsildars and the chief Police Officers of the thanas or registration circles. But no punishment for breach of the rules should, in my opinion, be inflicted by anyone except District Magistrates, Honorary Magistrates, and Tahsildars; and no punishment should in any case be inflicted, until after inquiry into the correctness of the report submitted by the inspecting agents.

8. Punishment should not be inflicted for breach of the rules until, at least, one warning had been given; and should usually take the form of temporarily quartering a suitable conservancy staff upon offending villages. In the case of neglect, or refusal, to clean out or repair the public village wells set apart for the supply of drinking water, the Magistrate might have the cleaning and repairs carried out at the expense of the villagers.

9. Even although action would not be taken by Magistrates on the reports of the inspecting agents until after further inquiry, it is not improbable that in the case of some of the village watchmen, patwaris, and perhaps subordinate police officers, their employment as inspecting and reporting agents might occasionally lead to abuses. The fear the villagers would have of their

villages being unfavourably reported upon might provide unscrupulous men with opportunities for extorting money or otherwise molesting the people. But watchmen and patwaris cannot be excluded from the list of inspecting agents, if supervision is to be general and constant. Caution in accepting their reports of breaches of the rules until confirmed by independent inquiry, and leniency in punishing such breaches, would reduce the risks of oppression to a minimum.

10. A system of rewards might be usefully worked in concert with punitive measures.

11. The rules should, in my opinion, be applied to all villages throughout the province. Where villages, such as some of those in Jaunpur and other eastern districts, are composed of a number of small hamlets, or of clusters of houses, scattered over a wide area; or where the number of inhabitants does not exceed a hundred, the rules would not need to be applied with the same stringency as in the case of large and compact villages like those in Banda, Hamirpur, and other trans-Jumna districts.

12. Drainage would involve the chief expenditure, which it would be absolutely necessary for the Government to meet. What this expenditure would be, I could not pretend to estimate. The drainage works in and around Meerut may be instanced as examples of what will be required in many other parts of the country. In addition to the cost of drainage works, the only other expenditure of which the villagers might, in special cases, be relieved by Government, would be the sinking of wells in villages in which good wells do not exist and the people are too poor to construct them; and the repairing of others when the repairs required would be beyond the resources of the villagers.

13. The weak point of the proposed scheme, it appears to me, is the deficiency of magisterial agency for enforcing the rules. It is out of the question to expect the District Magistrates to find time to deal with breaches of the sanitary rules occurring in villages counted by thousands. If Honorary Magistrates could be found who would be willing to devote themselves to the disposal of ordinary cases arising in connection with breaches of these rules, much relief would result to the District Magistrates; whilst the working of the rules would probably be more systematic and thorough.

From Brigade-Surgeon J. RICHARDSON, Sanitary Commissioner, North-Western Provinces and Oudh, to the Deputy Sanitary Commissioner, 1st Circle, North-Western Provinces and Oudh,—No. 500 C., dated Camp Meerut, the 26th March 1888.

Referring to Government No. 50 S.—V.- 10 B., dated Allahabad, 12th March 1888, from the Secretary to Government, North-Western Provinces and Oudh, and to its accompanying letter, No. 48, dated the 14th February 1888, from the Government of India, Home Department, copies of which were forwarded to you, I would request the favour of your letting me have the benefit of your views on the subject of the sanitation of villages in these provinces. You might state briefly—

(1) the chief insanitary conditions which you think call for and are capable of removal;
(2) the rules which you would propose as best suited to accomplish their removal;
(3) the areas to which, in your opinion, the operation of such rules should, at first, be confined;
(4) the agency by which the rules should be enforced;
(5) the precautions you would recommend with a view to prevent oppression, extortion or other injustice in carrying out the rules.

Although I have specified the preceding points for your consideration, I shall be glad if you will favour me with your views on any collateral points having a practical bearing on the improvement of sanitation in the villages of these provinces.

From R. JAMESON, Esq., Deputy Sanitary Commissioner, 1st Circle, North-Western Provinces and Oudh, to the Sanitary Commissioner, North-Western Provinces and Oudh,—No. 82, dated Camp Dehra Dún, the 3rd April 1888.

I have the honour to acknowledge receipt of your No. 500—C., of 27th March.

The question of village sanitation is one to which I directed much attention during this camping season, and I talked the question over with people of all castes and positions in native society in all parts of my circle. The conclusions I came to are, shortly, as follows:—

(*a*) That for sanitary improvement, villages and towns must be divided into two classes: first, those in or near which drainage works are necessary which will require engineering skill. In most of those the expenditure in money will be very considerable, and the villagers cannot possibly provide the money. In this circle such towns and villages are very numerous, and as instances, I mention Jalesar in Etah; Etah itself; Sikandra Rao in Aligarh; Aurangabad in Bulandshahr;

Kazi-ka-pur in Muzaffarnagar; Deoband in Saharanpur. These and many other towns and villages, are surrounded by low land or numerous excavations, from which there is no exit for water, and in the rains the country around is a lake or swamp. If these, and all towns and villages similarly situated, are to be made healthy, the work must be done by Government, and the expenditure in cash will be very considerable, amounting in the aggregate to many lakhs. And nothing short of extensive and expensive drainage works will make such places healthy. If the country around be swampy and malarious, sweeping the village streets and carrying manure beyond the town limits—excellent sanitary aids as these are—will not prevent fever, and it is fever that causes most of the ill-health, It is the Engineer who will make such places healthy, not the *mehter* with his broom.

(*b*) The other class alluded to are those towns and villages for which a drainage scheme is unnecessary. The sanitary condition of nearly every village in the country and most of the towns, is about as bad as laziness and dirty habits can make them. The fields around, wherever there is the smallest privacy, are strewn with fœcal deposits. Close around the village, and along the roads entering it, are heaps of manure, usually within a few feet of inhabited dwellings, and sometimes even banked up against the walls of dwelling-houses. The excavations round, or in, the village, and from which the village was built, are usually cess-pools. The banks are usually middens, and a shower of rain washes much filth into the excavations. The excavations become full of filthy water, and the water floods back among the houses, making roads ditches, and the walls of houses, damp and sodden. House drains flow into the lanes, making them cess-pools. Cattle in dozens go splashing along lanes, which are mostly about three or four feet wide, and make them filthy ditches. Water standing on low ground is brown from urine. Close around nearly all wells are holes, which in the rains stand full of filthy water. Manure heaps are frequently alongside those holes. People bathe at the wells, wash clothes, including *dhotis* there; and there, if the excavations be dry, cattle are watered. Wells, therefore, are nearly always in the middle of a series of cess-pools. Often they are alongside drains. Last of all, the roofs of houses are seldom waterproof.

What should be done is clear. Each village should have one or more wells set apart for drinking water alone, and the ground around should be raised and all holes filled in. Excavations should be filled up. No manure should be within 100 yards of the town. But the means by which such improvements can be effected are to me not very apparent. I suggested, in talking to zamindars and others, a house-tax of, say, one anna a month, a council of the village elders collecting the money and appointing a village sanitary staff.

A tax was strongly objected to in every village. If the "Sarkar" would clean the village, well and good; but everybody was so poor that one anna a month would ruin them all. Many and great sanitary improvements *could be* effected, without the expenditure of a rupee, if the villagers themselves would fill in holes and keep manure far from dwellings. In some places much arable land would be recovered if drainage were improved. But it is hopeless to attempt to persuade villagers to do anything of this nature. They are anxious to have such places drained; but no man will pay a rupee or take a spade himself. If not undertaken by Government, nothing will be done. In many instances the zamindars said they would keep their villages clean if the "Sarkar" would give the order and give them powers to compel obedience. This, however, would lead to many evils, for the zamindars themselves are often the worst offenders against sanitary laws, and there is no village agency which could unhesitatingly be trusted with powers to fine and punish.

In the Meerut District, Mr. Jones, the Tahsildar of Hapur, visited a number of large villages and appointed places in which manure should be kept. Why should not all Tahsildars do the same? Ultimately, there must be powers given to coerce those who, after due warning, transgress sanitary rules.

It would be easy to frame a few simple rules such as that one or more wells should be set apart for drinking purposes, and such wells should be carefully protected from pollution; that no manure should be near dwelling-houses; that cattle should be kept further away from dwelling houses; that there should be no crowding of people or houses. Tahsildars, District Officers, and all Sanitary Officers visiting villages would see how far the rules were carried out. It might be possible to appoint a village committee to regulate sanitary measures and gradually enforce the rules. The inert or resisting mass to be pushed along is appalling; but continued untiring effort may conquer in the end.

As regards the area within which sanitary rules should be issued, I would have no restrictions. I would issue them in all villages; but would enforce them more stringently and at an earlier date in large villages.

In large villages, say, with over 2,000 inhabitants, the village committee might, perhaps, after a time, be empowered to fine to a small amount: a list of all fines being sent to the Collector of the district. Tahsildars and District Officers and Sanitary Officers might also have power to fine. How the fines should be levied, is a matter for District Officers to settle, and may perhaps entail much trouble. It might at first be enough if officers reported insanitary villages to the District Magistrate, who would then direct an officer to inspect the village and fine if necessary. On this point the district authorities can advise better than I.

From S. J. THOMPSON, Esq., Deputy Sanitary Commissioner, 2nd Circle, North-Western Provinces and Oudh, to the Sanitary Commissioner, North-Western Provinces and Oudh.—No. 546, dated Almora, the 25th April 1888.

I have the honour to acknowledge your letter No. 501—C. of 27th March 1888, and in reply to submit my opinion that the rules now adopted in the Central Provinces may, with advantage, be applied to the North-Western Provinces and Oudh. In reply to the first and second enquiry in your letter, I think the chief insanitary conditions which call for and are capable of removal are—

(1) the contamination of wells, rivers, and tanks;
(2) the fouling of the soil;
(3) the practice of digging holes about the inhabited site for the purpose of procuring earth for repairing and building huts.

The rules in force in the Central Provinces deal fairly well with the first condition; but under sub-division "*a*," I would add, "repaired when necessary," as well as cleaned: in dealing with the care of wells, I would set aside certain wells, tanks and ghâts in the village to be used for drinking purposes only, and would have these marked all over the country with one common symbol, which would in time become recognized by the people.

Rules II and III deal fairly with the second condition. The third condition I should endeavour to remove by marking out certain ravines or water-courses which, on being levelled, widened, or deepened, would yield the earth necessary for the repairs of dwellings. This, though not always feasible, is an often possible plan.

As regards the third query, I would extend the operation of the rules at once to the whole of these provinces, only excluding villages with less than 50 inhabitants. They will work better in some places than others, but the extent of their application would defeat possible attempts to discredit the experiment.

As regards the fourth and fifth queries, it is here that the great difficulty lies.

I would primarily make it one of the duties of a chaukidar to report any disobedience of the rules in his village, and hold him responsible for neglect of such duty. All officials of the Sanitation Department should be qualified to report. No action, however, should be taken on any such report until it had been confirmed by the report of one of the officials hereafter named.

The District Magistrate, the Joint and Assistant Magistrates, the Civil Surgeon, the District Superintendent of Police, the Sanitary Commissioner, the Deputy Sanitary Commissioners and the Deputy Superintendents of Vaccination, Deputy Magistrates, Honorary Magistrates, Tahsildars, and Members of District Boards might be the authorities authorized to verify such reports of chaukidars, or to report direct where such action seemed desirable. Power to punish should not be entrusted to any one below the rank of a Tahsildar. It should usually take the form of quartering a conservancy staff on the village, the cost of the same to be met by the inhabitants, or by charging them with the expense of small, but necessary, sanitary works, such as the repair of a well, or the digging of a water-escape channel.

All reports should go to the President, District Board, and should be in a definite form, giving the name and population of the village, the apparent pecuniary status of the residents, and, where the appointment of a conservancy staff is desirable, the strength of the same and the length of time for which it will be required. In the same way, where sanitary works are recommended, the probable cost of the same should be stated.

Copies of the rules and the penalties for neglect of them should be circulated for six months, before the rules are brought into force.

The operation of the rules should be introduced gently, action only being taken at first on reports made by the more skilled agency. Chaukidars' verified reports should lead first to warnings, and each case should be gone into as carefully as possible.

From Surgeon M. GAISFORD, Deputy Sanitary Commissioner, 3rd Circle, North-Western Provinces and Oudh, to the Sanitary Commissioner, North-Western Provinces and Oudh,—No. 691, dated Camp Garhwal, the 5th May 1888.

I have the honour to acknowledge receipt of your letter No. 502—C., dated 27th March 1888, on the subject of village sanitation in these provinces.

2. In reply, it will, I think, be convenient first to consider the five points specially mentioned in your letter in their order. These are—

(1) The chief insanitary conditions which call for, and are capable of, removal. The insanitary conditions prevailing in the villages generally are legion, and it would be hopeless to attempt to deal with them all. I venture to think, therefore, that it will suffice to confine our first endeavours to securing (i) a clean village site and (ii) a pure water-supply. In obtaining the first, much will have been done towards gaining the second also; since the influence of a foul village site upon the purity of the water beneath as well as upon the air above it, is sufficiently obvious. These two points, moreover, will necessarily involve a simple system of conservancy, where such is required, as well as ordinary provision for surface drainage. In considering the practicability of any proposed measures, it seems especially advisable to keep two facts prominently in view. These are (*a*) that the existing conditions of village life have, from long usage and popular ignorance, so engrained themselves into the habits and prejudices of the people that, so far from desiring any change, they will almost certainly regard any change as unnecessary, if not as a direct hardship; and (*b*) that a large proportion of the villagers are so poor that they are often hard put to it to keep body and soul together, and are absolutely unable to afford any luxuries, whether sanitary or otherwise. It follows from these facts that, to make any extensive demands either upon the intelligent co-operation or upon the pockets of the villagers, is to court failure, and it is as well, therefore, to set out with a clear appreciation of the difficulties of the situation.

(2) The rules I would propose, at any rate to commence with, would be few and simple, and those laid down in the Central Provinces Notification No. 4784, dated 7th December 1885, and quoted in the Government of India's letter above referred to, appear to me to leave little to be desired, although a clause prohibiting the leading of drains from *nabdans* and cattle-sheds in the direction of the water-supply, might be added, I think, with advantage.

(3) Sanitary measures, however simple, are tolerably certain to be neglected, unless constant supervision is exercised; and, in order to secure such supervision, I would limit the operation of the rules, to commence with, within a radius of, say, five miles of each sudder station and tahsil. When they have taken root within that area they should be gradually extended, so as finally to include all villages having 50 or more inhabitants.

(4) The agency by which the rules should be enforced should, I think, be (1) village lambardars and chaukidars; (2) patwaris and kanungos; (3) Tahsildars, Honorary Magistrates, Deputy Collectors, District Superintendents of Police, the Sanitary Commissioner and his Deputies (to whom the subordinate officials of the Sanitary Department should report), Assistant Magistrates, Joint Magistrates, and the District Magistrates and Collectors.

(5) With a view to prevent injustice or oppression, I would recommend that no report made by officials in groups (1) and (2) should be acted upon until verified by one of the Officers included in class (3), and that the awarding of punishments should be restricted to the three grades of Magistrates last named.

(6) Punishments should ordinarily consist in carrying out such sanitary measures as are imperatively required, at the expense of the defaulting parties, and at the lowest possible cost. Some encouragement might also be given to such villages as showed themselves especially deserving of it; and I am in favour of the proposal that this should take the form of a small abatement of revenue. An occasional concession of this kind would, I feel sure, be fully repaid in results.

From H. G. Ross, Esq., Commissioner, Kumaun Division, to the Secretary to the Government of the North-Western Provinces and Oudh,—No. 1550—XX-7, dated the 19th May 1888.

I have the honour to acknowledge your No. 50 S.—V-10 B., dated the 12th March last, with enclosure, on the subject of improved sanitation for villages.

2. This Division is divided into three classes of country, so far as sanitation is concerned—

(1) the hills;
(2) the Bhabar;
(3) the Tarai.

3. In the former, but for the apathy of the people, and also, I am sorry to say, of the District Officers, sanitation ought to be an easy matter. There is no necessity for drainage works, as the villages are always situated on knolls or spurs; rain readily runs off, and heavy rain washes away filth with it. We have for years past been endeavouring to enforce sanitary rules, and with varying success. When the District Officers took the matter up with a will, there was marked improvement. When they thought the matter too large to be coped with and were callous, things fell back.

4. We have in our hill villages padhans and malguzars, who are paid by Government, *i. e.*, they receive certain dues simply because they are supposed to do Government work, police and other. These are the men who should be held primarily responsible for sanitation.

5. I have issued strict orders to the District Officers that the padhans and malguzars are to be held responsible that—

(1) cattle are always kept in separate sheds, and not in lower storeys of dwelling-houses;
(2) that places from which drinking water is procured are to be kept clean and free from pollution;
(3) that no nuisances are to be allowed within a certain distance of the village, or of water springs or streams, and always *down* hill from it and never on roads.

6. I have desired officers on tour to make sudden raids, right and left, and inspect villages, fining the village, the padhan, and malguzar heavily when they find rules of sanitation neglected.

7. In the Bhabar there are only two large villages, Haldwani and Ramnagar, and, in both, Act XX of 1856 is in force, and a staff of sweepers is kept up. The agricultural community live in hamlets, scattered about here and there, long distances apart.

8. The Tarai is more like the plains, and I enclose, in original, Mr. Macdonald's proposals, to which I can add nothing.

From J. C. MACDONALD, Esq., Superintendent, Tarai District, to the Commissioner, Kumaun Division,—No. 649—XX, dated Camp Tarai, the 26th March 1888.

I have the honour to acknowledge receipt of your No. 1096—XX-7, dated the 7th instant, forwarding for report a copy of G. O. No. 50 S.—V-10 B., of the 12th March, on the subject of village sanitation.

2. In my opinion it may be of little use my making suggestions which could only apply to the part of the country with which I am acquainted, where the administration differs very much from the large regulation districts.

3. In all ordinary-sized villages I would try to have the following measures carried out:—

(1) every tenant to "leep" his house once or twice a year with clay, *i. e.*, to re-plaster it and clean it;
(2) every village well to be cleaned once or twice a year, and its masonry to be kept in order and well raised;
(3) all holes where possible, to be filled, and one place fixed for excavation of earth required, at a convenient distance from the village;
(4) the manure of each house to be collected and placed in one convenient spot near the house from whence the owner can remove it to his holding;
(5) the village lands to be cultivated close up to the houses, so that the soil may be turned up once or twice a year;
(6) in large villages mud pillars to be erected, beyond which the people should go for offices of nature;
(7) these rules to be carried out by the padhan or head man, with assistance from the peshkar of tahsil under the tahsildar, or in settled villages by the zamindar or lambardar if resident, if not, his agent or some one elected by the villagers from amongst themselves—in the latter case, the zamindar should recognize by some small privilege the result of the work.

4. The real cause of our fever is the cold dampness of the soil, and the only way to reduce this is to raise the dwellings, and where land is given free, some tenants might be induced to raise the level of their houses.

5. I should not in the plains recommend (so far as I know) the agency of the police being employed in any way. Let a certain number of villages be selected which can be inspected by

the Civil Officers (gazetted), and if they take an interest in it, great good would result, in finding out the drawbacks to orders being issued, and dealing with them.

6. No cost to Government would be required; it must be done through the people, and they should pay by grain on the crops any sweepers required, and the well-cleaning expenses in the same way.

7. Measures would be required for dealing with tenants who refused obedience to the rules. The results of the working in certain villages would show whether this could be generally carried out. Where villages are large and there are many wells and houses, it might be necessary to arrange for a staff of sweepers being paid by tenants in grain, and some renumeration from zamindars; but this should form the subject of a Committee of inquiry to report whether legislation is requisite.

From Colonel G. E. ERSKINE, Commissioner, Lucknow Division, to the Secretary to the Government of the North-Western Provinces and Oudh,—No. 2276, dated the 29th May 1888.

In reply to G. O. No. 50 S.—V-10 B. of the 12th March 1888, on the subject of practicability of issuing rules conferring on Magistrates and police officers certain powers to enforce sanitary measures, I have the honour to submit copy of reports of the Deputy Commissioners of my Division, and to state that, in my opinion, it will suffice, for some time to come, to apply the Banda methods to a few selected villages. I fear the day when we shall carry the masses with us in these sanitary efforts is still far off.

From W. F. WELLS, Esq., Officiating Deputy Commissioner of Lucknow, to the Commissioner, Lucknow Division,—No. 1518, dated Lucknow, the 24th March 1888.

With reference to G. O. No. 50 S.—V-10 B., dated 12th March 1888, copy received under your endorsement No. 1231 of 19th instant, I have the honour to state that the experience of the city of Lucknow shows the great difficulty of enforcing sanitary improvements, without constant supervision by trustworthy officials.

2. Nothing can be expected from lambardars themselves. They will, as a general rule, take no action unless when they want to worry a neighbour; and the interference of village or district police is to be deprecated. In my opinion the issue of the rules is impracticable.

From L. G. EVANS, Esq., Officiating Deputy Commissioner of Unao, to the Commissioner, Lucknow Division,—No. 694, dated Unao, the 9th April 1888.

In reply to your No. 1252, dated 19th ultimo, forwarding copy of G. O. No. 50 S.—V-10 B., dated 12th ultimo, I have the honour to submit a copy of a Memorandum recorded by Mr. Gibson before he left the district, and to add the following remarks.

2. In this district certain orders were issued by Mr. Dyson, the Deputy Commissioner, in June 1881, in accordance with G. Os. Nos. 158, dated 18th June 1880, and 115, dated 17th June 1881. Mr. Dyson directed that the rules introduced by Mr. McConaghey in Banda should be enforced in villages where the population exceeded 1,000, and tahsildars and police officers in charge of stations to be directed to inspect the villages periodically and report the result of their inspection to the Deputy Commissioner. These rules are nominally in force now.

3. The rules framed by the Chief Commissioner of the Central Provinces, received with the Government order under reply, are very elaborate, and in my opinion they could not possibly be practically worked in this district. The zamindars are much too apathetic to do anything in the matter, and any improvement in the matter of village sanitation can be effected by close and unremitting supervision on the part of Government officials.

4. While I was in camp in the last cold weather, I saw no attempt in any village to carry out the rules which have already been laid down. Tahsildars and police officers have long since ceased to make any exertions in the matter. An attempt might be made again to carry out the Banda rules; but I would suggest that they be applied first only to villages in the immediate neighbourhood of the sudder station. The Deputy Commissioner could then see for himself if the rules were obeyed to any extent. In order to prevent abuses, I should authorize *only* the tahsildars to inspect and report on the villages.

5. I am not in the least sanguine that any permanent improvement could be effected. Until the people themselves take an interest in the matter and realize the advantages of cleanliness, no real progress can be expected.

MEMORANDUM.

In my opinion sufficient executive action is taken for the present.

Legislation in this direction would be premature.

In large remedial operations of this kind special agency and money are wanted, and a door is opened for abuses and oppression which may constitute a greater evil than that sought to be removed. The rapid advance of material progress and education will quietly effect what is wanted in time.

H. W. GIBSON,
Deputy Commissioner.

From Major F. BARROW, Deputy Commissioner, Bara Banki, to the Commissioner, Lucknow Division,—Docket No. 603, dated the 26th March 1888.

With reference to Government letter No. 50-S.,dated 12th March 1888, has the honour to state that, in the opinion of the undersigned, rules regarding village sanitation might be issued; but the rules should not be universally applied. They should at first be applied only in, say:—

(1) Court of Wards' villages;
(2) the property of any intelligent landlord who is known to take a personal interest in sanitation, and by whom a request has been made for the introduction of the rules;
(3) in all towns in which Act XX of 1856 is in force;
(4) in any other villages at the discretion of the District Officer in which it can be shown that there is any trustworthy resident or residents who will assist in enforcing the rules.

From W. KAYE, Esq., Commissioner, Agra Division, to the Secretary to the Government of the North-Western Provinces and Oudh,—No. 5420—XIX-3, dated the 2nd June 1888.

I have the honour to acknowledge the orders of Government, No. 50S.—V-10 B., dated 12th March last, Sanitation Department, and of its annexure, requesting my opinion as to whether it would be practicable to issue rules in the spirit of the instructions of the Government of India regarding village sanitation.

2. I forward herewith opinions by the District Officers of Muttra, Etah, and Farukhabad, which will be found worth reading.

3. The rules promulgated in the Central Provinces have evidently been a complete dead letter. It is utterly useless to attempt to enforce sanitation through "mukaddams" or lambardars or the like. Whatever is done must be done by orders of Government, enforced by Government officials. The deduction is that you must not give orders which you cannot enforce.

4. Any system of village drainage is quite beyond us. Efforts should be confined to providing good drinking water and cleaning village sites.

5. As to drinking water, Government might take power to provide and keep up proper wells where the people won't do it themselves. The expense could be recovered from the inhabitants in agricultural villages by a rate on the revenue or rent, and in other places by a house assessment. Natives fuss a good deal about drinking water; and I think they would gradually learn to provide good wells and keep them clean if they found that, if they did not do it, Government would do it at their expense.

6. As to inhabited sites, I would set up pucca pillars round every village to mark the limits within which nuisances are prohibited. The village should be bound to keep these pillars up, just as if they were boundary pillars. When a village is found to be very dirty within the prohibited limits, Government should have the power of fining the village. Gradually, I think, the space within the pucca pillars would get to be respected.

7. I would adopt Mr. Cadell's plan of exempting from assessment a definitely marked out area for the storage of manure.

8. I would adopt Mr. Growse's plan of setting aside a definite area as a tank from which all earth required for house repairs is to be taken, and I would prohibit altogether the indiscriminate digging of pits within the pucca pillars.

9. What I propose can, I think, be done at the cost of a little trouble and a good deal of discontent; but I am not prepared to assert that to carry out my scheme would seriously lower the death-rate. It seems to me that in discussing death-rates people overlook the fact that India is a tropical country, and that the climate is bad. Fevers are caused by climate, by canal irrigation, and by the habits of the people more than by bad sanitation. If, as Mr. Growse points out, we could teach the people to raise the inside of their houses above the level of

the ground, we should probably do more to lower mortality than by the most elaborate external sanitary arrangements that could be carried out.

10. All said and done, however, it is the Government which is the chief offender against the health of the people, in this part of India at any rate, for it is canal irrigation and consequent interference with sub-soil water-levels which is the real cause of the excessive fever prevalence of the Doab. Canal irrigation is a beautiful thing in times of drought, provided the department does not water more crops than it can keep alive, as it is somewhat apt to do. It keeps people alive in years of scanty rainfall; but it must be confessed that it greatly swells the mortality when rain is abundant. The one result is plain before all men's eyes. The other is only known to those who live among the people in canal districts. Ask Surgeon-General Rice what he thinks of the general health of the people of the Etah District, which is a network of canals from one end to the other. Ask Mr. Cadell what he thinks of the condition of the Muttra villages along the Agra Canal, where the Irrigation Department as a rule maintains that there are no signs of over-saturation.

11. Let the Canal Department set its house in order and provide drainage that will act in years of abundant, as well as in years of scanty rainfall; also let it either devise some method of payment by quantity for water supplied, or else cease to strive after flow irrigation. Flow irrigation of course pays the Irrigation Department, but it is flow irrigation to which nearly all the water-logging of the country is due. I should like to see canal distributaries laid out so as to provide lift irrigation chiefly. I do not under-estimate the good which canals do, nor do I forget that the last three years of heavy rainfall have been most exceptional, and that in dry years the outcry against the canals ceases at once. I do, however, maintain that much of the harm done by canals is preventible by better drainage and a less wasteful system of irrigation, and that, too, without in any way diminishing their usefulness.

From WILLIAM CROOKE, Esq., Officiating Magistrate of Etah, to the Commissioner, Agra Division,—No. 135, dated the 28th March 1888.

I have the honour to acknowledge receipt of your Circular, No. 3702—XIX-3, dated 24th March 1888, regarding village sanitation, and to report as follows.

2. There cannot be the slightest doubt that the rules as proposed by the Chief Commissioner would, if they could be enforced without the risk of undue annoyance to the people, be of great sanitary value. The question is, whether they could be so enforced, and as to this I am very doubtful. To go briefly into figures, we have in this district, a gross population of about three-quarters of a million (756,523). This population is divided into 1,561,898 separate families, there are 88,543 inhabited houses, there are 1,489 inhabited sites spread over an area of 1,738 miles. This gives 435 persons to the square mile. Now, it is quite plain that the effective control of local sanitation over such an area and population is a task of the most extraordinary difficulty. Our present district establishments were arranged without any idea that duties such as these would be imposed upon them. As it is, they are admittedly insufficient to carry on the ordinary work of administration; and if these duties are now imposed on them, they will inevitably break down under the strain. Further than this there is a conspicuous lack of men of intelligence and position among the rural classes to work a department like this. I do not know what the qualifications of a Central Provinces "mukaddam" may be: but if he is a man who can be trusted to work a policy of sanitation honestly and efficiently, I am quite sure he has no representative here. The only official who would represent him is the lambardar. But it must be remembered that our inhabited sites are, as a rule, exceedingly small. I must again go to figures: out of 1,489 inhabited sites, about a third (459) have less than 200 inhabitants: 1,360, or 91 per cent., of them have less than 2,000; a large number of villages are again owned by large non-resident proprietors; and here there is not even a lambardar to supervise the work. The average lambardar is a boor; he has no ideas of, and no taste for, sanitation. His own house is often the dirtiest in the whole village. Factions and ill-will are rife in these communities; and I fear there can be little doubt that even the best of our lambardars, if vested with these powers, would use them to worry their enemies.

3. There is another point which must not be lost sight of. We have, in this district, unusually favourable opportunities of judging what locally-managed sanitation can do, much more than in the neighbouring districts. We have no less than six municipalities with a population of 69,650; we have, in addition, 16 towns under Act XX of 1856, with a population of 53,831. The population under Municipal and Chaukidari Acts thus amounts to 123,481, or about one-sixth of the whole population of the district. All these towns are provided with sweepers, and surplus funds are spent on works of sanitation; but the result is far from satisfactory. Few of the Municipal Committees have much zeal for sanitation, and hardly any of the town

"panches" do anything to forward it. Even men of comparative intelligence like this confine themselves to having the main roads and drains swept. The lanes are very often neglected, and house-to-house cleansing is very perfunctorily performed.

4. The result seems to be that any general attempt to improve villages generally is, for the present at least, impracticable. It cannot be left altogether to local effort, and an establishment employed by Government to do the work must be well paid and costly. If the duties are made over to menial officials on a low salary, it can only end in trouble and be a source of annoyance and oppression to the people, while the result desired by Government will be only very imperfectly attained. After all, even in advanced countries like those of Europe, the value of sanitation is only very imperfectly understood, and many of our English towns and villages are still in ac ondition which violates every well known law of hygiene. I am inclined to doubt the possibility of introducing any reform like this *ab extra*. It can only come by degrees as the advancing intelligence of the general population leads them to accept it, and work out its principles and methods for themselves. No doubt the time will come when they *will* comprehend the laws of hygiene, just as some time or other they will get rid of the abject superstition which leads them now, when they will learn how to treat their women properly, to discontinue infant marriage, and emerge from the comparative barbarism in which they are plunged at present.

5. The figures of mortality among the rural population are, no doubt, terrible and startling. Fever, for instance, is accountable for the loss of some 25,000 people a year in this district. But it is, I venture to believe, exceedingly doubtful whether even a well-devised system of sanitation would remedy this. Much of this fever is climatic: and as long as our climate remains what it is, with a heavy rainfall, a tropical sun, and an immense range of temperature between day and night, so long fever and allied diseases must exist, and, further, are bound to increase as we develop canal irrigation at the expense of surface drainage, and raise the water-level as it has been raised in this part of the country during the last 30 years.

6. No one can help sympathizing with efforts like these, and no one would welcome a well-planned scheme of village sanitation more than I should do myself. But the more I consider the matter, the more I am conscious of the difficulties which surround it. At any rate, with our present establishments, we can do little more, I fear, than we are doing at present. We can, and ought to, teach the elementary laws of hygiene in our schools. The district officials in their annual tours can and do watch the statistics of mortality. We can and do look after sanitation and water-supply as we move about in camp. We can advise, we can warn the people; in the last resort we can punish them under the laws in force. But that we can work a general scheme, such as now proposed, seems to me at present out of the question.

From F. S. GROWSE, Esq., Collector of Farukhabad, to the Commissioner, Agra Division,—No. 318,—XIX, dated the 5th April 1888.

With reference to correspondence received with your No. 3702—XIX-3, dated 24th March, I have the honour to suggest that all tahsildars exercising any magisterial powers should be authorized to issue notices under section 133 of the Criminal Procedure Code, prohibiting the continuance of such nuisances as the discharge of sewage, or the accumulation of refuse on any public thoroughfare or its immediate vicinity. Such nuisances should be reported by the kanungos and patwaris, and, as a rule, the tahsildar should himself visit the spot before passing any final orders.

2. The above is the substance of a recommendation made by Mr. Trethewy, Assistant Collector, whose tour diaries indicate an interest in the difficult question of village sanitation.

3. Undoubtedly much might be done by an influential local officer like a tahsildar, if he were empowered to institute trials for nuisance on his own motion, and still more if he were systematically encouraged by the Government and his immediate superiors to instruct and advise the people as to what they should do to improve their own health and promote their own domestic convenience. The difficulty is, that most tahsildars have themselves very little insight in such matters.

4. However, the European Officers of the district staff, when on tour in the cold weather, would be able to check their work and suggest the direction of further improvements, and, in this manner, experience and knowledge would be gradually acquired.

5. Under such supervision, an ordinary Indian village would, in the course of a few years, be less repulsive in appearance than it is at present; but I doubt whether the Death Returns would be materially reduced.

6. An outbreak of cholera is a terrifying occurrence on account of its suddenness and the rapidity with which it runs its course; but the real scourge of the country is fever. This is felt all the year round, and will continue to be so until the people adopt a more rational style of

house-building. At present the ordinary mode of procedure is to dig a pit, and with the clay extracted from it, to raise a wall on its margin and roof it over for a habitation, the floor either remaining several feet below the surface of the ground outside, or being partly filled up with the first rubbish that comes to hand. Any person who is a little out of sorts and has to take to his bed in a damp, unwholesome cell of this description, almost invariably contracts fever, and in the majority of cases succumbs to it.

7. In no other country, however barbarous, is such a style of building in vogue. It has been adopted in these provinces on account of the tenacity of the ordinary clay soil, which thus lends itself readily to the purpose. But if in other countries, where poverty is as much felt as in India, building materials have invariably to be brought from a distance, the same necessity should be recognized here.

8. In older days the plan generally adopted was to set apart a portion of the village site for a tank, and to excavate from that, and from that only, for all the clay required for house-building. If this were enforced as a village regulation, and all indiscriminate pit-digging prohibited as a punishable nuisance, the rate of a village mortality would, I believe, be perceptibly reduced, especially if every new cottage were raised by a plinth as much above the level of the ground as it is now generally sunk below it. This would involve no cost, as the unskilled labour for earthwork would be supplied by the cottager's own family.

9. I am far from recommending the institution of any separate agency for the promotion and supervision of sanitary measures in the smaller towns and villages, and I am of opinion that the matter can be best advanced by more active interest on the part of the regular district authorities.

From A. CADELL, Esq., Magistrate of Muttra, to the Commissioner, Agra Division,—No. 195—XIX, dated the 11th April 1888.

In reply to your No. 3702—XIX-3, dated 24th March 1888, I have the honour to state that, in my opinion, any attempt to enforce rules for village sanitation should be made with the greatest caution. If such rules are not to be enforced, they are useless; if they are enforced, there is a serious danger that the measures taken to enforce them may be productive of tyranny and oppression.

2. The district of which I have now charge is one of the smallest in which I have ever exercised magisterial powers; it is admirably supplied with roads, and yet I should be very sorry to see attempted throughout it the measures which have been authorized in the Central Provinces.

3. Our experience of municipalites and towns administered under Act XX of 1856 shows how very difficult it is to enforce any considerable attempt at conservancy without constant supervision by responsible officers; and I am of opinion that in the case of villages, we should restrict ourselves to matters in which either public opinion is to some extent on the side of sanitation, or in which, by general provisions, Government can help and encourage the people to aim at greater cleanliness than is at present common.

4. The requirements to be considered are stated, broadly, as three in number—

(*a*) The provision of pure water;
(*b*) drainage;
(*c*) a simple conservancy system.

5. With regard to the first point, the people are, notwithstanding their many faults of omission and commission, thoroughly alive to the advantages of a good water-supply, and the majority would, I think, welcome rules which should prevent the contamination of the water-supply; and regarding this matter only would I advocate the issue of the rules generally applicable to villages. It will have, however, to be considered how these rules are to be enforced.

6. As to drainage, this ordinarily entails so considerable an expenditure, that it is difficult of accomplishment in the case of small villages; whereas in the case of towns under Act XX of 1856, it is one of the first things thought of. In the case of municipalities, on the other hand, local opinion is often in advance of Government, which does not permit the taxation which is necessary to render drainage possible. In my opinion, then, drainage is not a matter within the power of small villages, and rules regarding it are unnecessary.

7. The necessity of conservancy throughout the country is generally admitted by all European officials; but so little do the natives of the country trouble themselves on the subject, that whenever the supervision by European Officers is relaxed, this is the first branch of municipal or Act XX town administration which suffers; and so long as public opinion is so careless on the subject, I do not see that there is any use in issuing rules which do little or no good, and which tend to give an opening for oppression. I would not therefore extend Rule II

of Central Provinces Notification No. 4784 to all or most villages, but would restrict it to the largest and most accessible, including all those under Act XX of 1856.

8. Compliance with Rule III should, in my opinion, be encouraged rather than enforced, except in the larger villages, and the first help that is necessary is the exemption from assessment of land which shall be kept apart for the storing of rubbish and manure. The manure heap plot should be as much a matter of course, and should be as inviolable as the plot for burning the dead, and in many highly-cultivated villages there is absolutely no uncultivated land available for the purpose. At all future settlements I would exempt from assessment to the north and south of the village plots aggregating about an acre for every thousand inhabitants, on condition that these plots should not be cultivated, but should be reserved for the storage of manure. To secure the provision of these plots in every village, legislation would probably be required. Pending a revision of settlement, arrangements could be made in many of the larger villages with the assent of the zamindars, and in Act XX towns, land where not already provided can be rented.

9. At the census the population of this district was distributed as follows:—

Total population	671,690
In three municipalities	87,714
In ten towns administered under Act XX of 1856 . .	41,416
Other towns with over 3,000 inhabitants (13) . . .	65,545
Ditto with less than 3,000 but over 2,000 (27) . .	67,431
Towns with between 1,000 and 2,000 inhabitants (100) .	142,405
Ditto 500 and 1,000 inhabitants (232) .	160,902
Ditto 250 and 500 inhabitants (279) .	73,264
Towns with fewer than 250 inhabitants (89) . .	33,013
TOTAL .	671,690

A population of 129,130 inhabitants is already, to some extent, provided for, and to this should be added a portion of the population of 65,545 residing in towns with more than 3,000 inhabitants, for in some at least the introduction or re-introduction of Act XX of 1856 is desirable. But at present they are excluded, and outside municipal and Act XX towns there remains a population of 542,560, for which, roughly speaking, 543 acres of manure plots are required. If the zamindars assented to the arrangement, the cost to Government would be about Rs. 2,715 per annum at Rs. 5 per acre, and this may be looked upon as an outside estimate, for in many villages waste-land is available. If the experiment were restricted to the villages in which the population exceeds 1,000 inhabitants, the annual loss of revenue would not exceed Rs. 1,375.

10. Central Provinces Resolution No. 3361—145, dated the 8th July 1887, would seem to show that the attempt to enforce conservancy throughout districts has failed in the Central Provinces, as signally as it has failed on different occasions in these provinces. We have still to educate the people up to an appreciation of the merest elements of conservancy, and our best way of doing this is not, in my opinion, to issue rules which in the majority of cases are never to be observed, but to show to the villager frequenting the district, or pargana capital, or the local market, the advantages which may be derived from a moderate taxation expended in securing improved conservancy. If we restrict the area of our efforts, we may secure good results; if we attempt to superintend the conservancy of a whole district, the area of even the smallest district will prove too great for supervision by Officers busied with many other important duties.

11. I would therefore recommend—

(*a*) that general rules should be restricted—

(1) to the improvement of the water-supply;

(2) to the provision of plots for the storing of manure at a suitable distance from the village site:

(*b*) that provisions for the compulsory improvement of conservancy be restricted for the present to towns under Act XX of 1856, and the few agricultural villages, the population of which exceeds 3,000 inhabitants.

From W. LANE, Esq., Commissioner, Meerut Division, to the Secretary to the Government of the North-Western Provinces and Oudh,—No. 7289—XX-4, dated the 29th June 1888.

I have the honour to acknowledge the receipt of G. O. No. 50 S.—V-10 B., dated the 12th March 1888, in the Sanitation Department, in which my opinion is asked on paragraph 4 of G. G. O. No. 48, dated the 14th February 1888, communicating remarks on the Annual Administration Report of the Sanitary Commissioner, North-Western Provinces and Oudh, for 1886.

2. I have consulted the several District Officers of my Division, and I beg to submit copies of their opinions as noted at foot.

3. My own opinion is that a few simple rules might be framed with a view to improve the conditions of the drinking wells and to keep the larger villages clean. The administration of these rules should be made over to Local Boards who, if they are good for anything, should be able to do work of this sort. The mode of punishment for their infraction, however, would have to be carefully considered to prevent oppression. It would be hard to drag offenders to the Sudder Courts for trifling matters. Tahsildars with magisterial powers might dispose of such cases and Honorary Magistrates residing in the neighbourhood; but it is in just such charges that abuses are to be guarded against. Still the members of Local Boards form the only machinery we could employ, and the experiment might be tried.

From W. CHURCH, Esq., Magistrate of Saharanpur, to the Commissioner, Meerut Division,—No. 229—XX-2, dated the 4th April 1888.

With reference to your No. 4429—34-XX-4, dated 23rd March, I have the honour to offer my opinion on the matter of village sanitation. It seems to me almost impossible to hope for any great improvement on a large scale in this direction. Supervision will be practically impossible, and the conferment of magisterial powers on a single person in the village community will cause heartburnings and jealousies among those who have not been selected for the honour. Where, however, an exceptionally enlightened zamindar can be found, who is both willing and fit to exercise such powers, they might be conferred experimentally, in respect of the village in which he resides, or the group of villages when they be all together, which he owns. The rules should be of the simplest kind, and in my opinion all that is required is to keep the wells clean and to have the village filth deposited in a site specially reserved and sufficiently far from the abadi. No rules whatever are required as to places to be set apart for purposes of nature. Natives generally go beyond the limit mentioned in the Circular, *viz.*, 100 yards from the village.

From D. F. ADDIS, Esq., Magistrate of Bulandshahr, to the Commissioner, Meerut Division,—No. 205—XX, dated the 13th April 1888.

I have the honour to reply to your No. 4429—34-XX-4, dated 23rd March 1888, on the subject of village sanitation. In 1880, Mr. Growse, then Collector of this district, issued certain rules regarding village sanitation, of which I enclose a copy. The rules were extended only to large villages, of which the population exceeded 1,400. Land was set apart for manure heaps at a distance of 200 yards from the village, and the inhabitants were required to carry their sweepings daily to this place. Nuisances were forbidden within 200 yards of the village, or 20 yards of a road. Drinking wells were required to be kept clean, zamindars and lambardars were made responsible for the carrying out of the rules, and supervision was entrusted to tahsildars, police, and Honorary Magistrates.

2. The principles of these rules seem to me excellent. All that is required is to improve and extend them. I should require that all wells used for drinking purposes be kept in good repair and cleaned out once before the rains. I should extend the rules to all villages with a population of over 500, and when they were found to work smoothly, to villages with a smaller population. The lambardars and zamindars should be made responsible for enforcing them, and I do not think that any expenditure on the part of Government is necessary.

3. I do not think it would be advisable to give the zamindars power to collect certain dues for sanitation. In most villages there are resident sweepers who are paid by the people for keeping the villages clean, either in grain or land. The sanitation that is required can be done by the inhabitants without extra expense. All that is required is that they should be guided and instructed on certain points.

4. Power should be given to District Magistrates of enforcing the rules, either by infliction of small fines, or by carrying out necessary sanitation or the repair of wells, and recovering the cost from the zamindars.

From G. FORBES, Esq., Officiating Superintentent, Dehra Dun, to the Commissioner, Meerut Division,—No. 514—XX-45, dated the 25th April 1888.

With reference to your No. 4429—34-XX-4, dated 23rd March 1888, forwarding the Secretary to Government's No. 50 S—V-10 B., dated 12th March 1888, I have the honour to submit the following remarks:—

(1) I think that a few simple rules in regard to village sanitation might well be issued, and that, considering the agencies at present at the disposal of Government, there need be no danger that these rules would be abused or made an instrument of oppression.

(2) I am of opinion that the supervision of the working of any rules that might be introduced might well be entrusted to the members of the several Local Boards in a district. The general control would of course rest with the Pargana Magistrate; but *complaints* of the violation of any rule would be made by a member of the Local Board only.

(3) The villages in each pargana might be portioned out between the several members of the Local Board of that pargana, a member could easily inspect all the villages under his charge once in a month, and then make complaint to the Magistrate in charge of the pargana of any violation of a rule that he might have noticed and which he might think deserving of punishment, with a view to preventing its recurrence.

(4) Members of the Local Boards could, I am sure, with very little encouragement, be induced to take an interest in the question of village sanitation, and the duty which I contemplate should be imposed upon them, would give them, an importance and an authority which they do not now always possess.

(5) I do not think that, with the stamp of men that now serve upon District Boards, there would be any fear that the power given to them under the rules would be abused.

(6) Members of Municipal Boards are now often entrusted with powers of a similar character, and I do not think that members of District Boards are of an inferior stamp or less trustworthy than they.

(7) So long as we attempt to work sanitary rules through Government officials only, the people will always regard sanitation as something foreign and a "fad" of their rulers. If, however, they find the leading men in their own local areas interested in the question, they are much more likely to be interested in it themselves.

(8) This scheme would, of course, mean no extra cost whatever to Government.

From A. M. MAREHAM, Esq., Magistrate of Muzaffarnagar, to the Commissioner, Meerut Division,—Docket No. 220—XX, dated the 25th April 1888.

In reply to his No. 4429—34-XX-4, dated 23rd March 1888, forwarding G. O. No. 50S.—V-10B., dated 12th idem, calling for an expression of an opinion on the Annual Administration Report of the Sanitary Commissioner, North-Western Provinces and Oudh for 1886, paragraph 4, has the honour to inform him that, as undersigned has already sent in an opinion as Magistrate of Bijnor, it does not seem necessary to submit a second.

From J. KENNEDY, Esq., Magistrate of Aligarh, to the Commissioner, Meerut Division, No.—37—XIX, dated the 21st May 1888.

I have the honour to submit the report called for in your No. 4429-34-XX-4, dated 23rd March 1888, with its enclosures.

2. The subject was fully discussed at a meeting of the District Board, and excited much interest among the members, many of whom offered to act as unpaid Sanitary Inspectors for the localities in the neighbourhood of their homes. There is little doubt, I think, that work of this kind would be much more popular among the members than the inspection of hospitals and schools; but there was, naturally, much variety of opinion regarding the powers with which these unpaid Inspectors ought to be invested.

3. The question of village sanitation falls into three divisions,—

(1) Latrine arrangements;
(2) Conservancy of manure; and
(3) The water-supply.

The latter is the easiest to deal with. Drinking water, as a rule in this district, is supplied by wells and not by tanks, and the Magistrate can order the wells to be cleaned, their coping raised, or platforms built around them to prevent dirty water from contaminating the pure drinking water of the well. All this is more or less carried out in the municipalities and chaukidari towns, and it can be carried out in the larger villages without much trouble if the members of the District Board really undertake the supervision and inspection of the work, more especially if the Board were to devote a small sum for the repair of *panchayeti* or ownerless wells. In the same way the wells which are no longer used can be closed. Where wells do not exist, the Magistrate is legally helpless. I once drew up a list of nearly 300 hamlets in the Gorakhpur tarai, where the people obtained their drinking water by digging a hole in the bottom of a rainy-weather nala; but I was signally unsuccessful in persuading the zamindars to make wells for their tenants in these villages. This difficulty does not occur in the Aligarh District; but I think that some legal provision should be made, under which the zamindars might be obliged to provide drinking water for every hamlet of a specified size.

4. The supply of drinking water is a thing which can be obtained without much trouble, because the work can be done, once for all, by pressure on the zamindar and extraneous agency;

but latrine arrangements and manure heaps require a permanent establishment, constant supervision, and the neighbourhood of some judicial authority to punish offenders. Latrine arrangements in villages are, I believe, impossible. As it is, the men retire to the fields, and it is the women and children who foul the lanes and skirts of the village. In such a case the only punishment possible is to compel the village to entertain one or more *mehters*. If the cost is paid by the zamindar, the offenders go scot-free; if a house-tax is imposed, it must be levied through the patwari or the zamindar, and is objectionable either way. The manure stocks also require a regular establishment if they are to be properly dealt with. It is easy to clear the manure stocks occasionally out of a village or to fix places where manure shall be deposited; but I know from my own experience that in such cases the villagers often take to stocking the manure within their houses, and any arrangement speedily becomes obsolete.

5. To come to the practical measures required, the work for many reasons ought obviously to be put under the District Board, and, in the first place, it ought to be limited to selected areas, where we can easily secure unpaid supervision. In the Aligarh District this could only be effectively done in the neighbourhood of Aligarh, Sikandra Rao, Mursan, Dadon, and one or two other places. Next, I would limit the rules to villages with 100 houses and upwards. These villages ought to be compelled to keep a staff of one or more sweepers, to be paid privately if possible, and in case of failure, to be paid through the District Board, the money being recoverable from the zamindar, who might recover it by a cess not exceeding six pies per rupee from each cultivator's rent. I would not attempt to enforce latrine arrangements, because this could not be done without fining the offenders, and the sweeping staff ought to be sufficient to keep the place clean; but I would select sites for manure heaps, and I would enforce the arrangement by charging the proprietor for the carriage of the manure to the selected site in case of disobedience, and also by a small fine to be levied by a Magistrate. Legal powers ought to be conferred on the Chairmen of District Boards to enforce the supply of drinking-water by the zamindars, and he ought to have the power to issue orders for the repair or the cleaning of wells, their preservation from filthy water, and the closure of wells that were unwholesome: the cost in these cases should be borne by the proprietor, and wells in private houses or enclosures ought to be exempted. The District Board ought also to be at liberty to undertake the repair of such *panchayeti* or ownerless wells as might be necessary. Limited in the way I have above stated, the measure might be worked with tolerable efficiency and without too much friction, although it must be remembered that the existing conservancy of our municipal and chaukidari towns is very far from perfect, and we cannot expect much perfection in our villages. But if the measure is extended to the whole district, we shall need a special staff of paid Sanitary Inspectors, and then in the end, perhaps, a special cess—in fact, a new Department, with a considerable revenue.

From R. S. WHITEWAY, Esq., Magistrate of Meerut, to the Commissioner, Meerut Division,—No. 410—XX-4, dated the 21st June 1888.

I have the honour to acknowledge the receipt of your endorsement No. 4429—34-XX-4, dated 23rd March 1888, forwarding for report G. O. No. 50S.—V-10B., of 12th March 1888, and subsequent reminders. I regret the delay which has occurred: the report was delayed for the replies of tahsildars and others who have, I am sorry to say, however, not afforded me much help by their replies.

2. Local efforts can only be hoped for exceptionally to aid in sanitation. Official attempts, and even private attempts, in this direction are looked on at least with apathy by the people at large, and there is always present the danger that a set of rules, with penalties attached, will be used as a means of annoyance by designing persons.

3. The Central Provinces rules are practical; but I doubt whether the machinery used there could be utilized here. The work could not be done by the lambardar alone: villages have been, and are being, rapidly broken up by partition, and even where there has been no partition, there are often conflicting interests represented by more than one lambardar. Recent arrangements by which any sharer can pay his revenue by money-order direct to the tahsil, has weakened the lambardar's position, and given an impetus to the tendency to regard the village representative, not as the village head man, but as the village whipping-post, who, without leading, has to bear all the troubles.

4. The rules could, however, be introduced with certain limitations. They should be started only in the larger villages: the limit of 50 inhabitants for the Central Provinces is too low for here. I do not think they should be introduced in any inhabited site of less than 200 people, and they should be worked by a *panch* of the respectable inhabitants. Further, they should only, for the present, be introduced in places where the supervision by Revenue Officers (and

Revenue Officers only) would be easy. The rules should do much good as educational agents. Many insanitary practices arise from mere thoughtlessness : it can, for instance, be agreeable to no man to drink water contaminated by the drainage from a corpse.

5. There are, in this district, nine municipalities and 19 towns in which Act XX of 1856 is in force : in these 28 places, therefore, sanitation is attempted with more or less success. In some other large villages, too small for the introduction of Act XX, a small body of sweepers is entertained, who are paid by the inhabitants, a small fund kept and administered by the people is collected from the residents, or got by selling the street-sweepings for manure, or by leasing out slaughter-houses, which is used in paying the sweepers. The plan cannot be carried far, and is only suitable to the large village as opposed to the small town.

6. Mr. Wright, the late Magistrate, was unremitting in his endeavours to promote sanitation, and his instructions to his subordinates as to platforms to drinking wells, and as to the removal of manure from the village site, were unremitting.

7. Meerut is essentially a fever-stricken district, and one of the most important objects to be gained is to minimize the effect of malaria, especially at night. For this purpose the floors of all dwelling-houses should be raised above the ground-level ; but this is not a point in which any rules can be issued, or administrative effort expended.

From H. S. Boys, Esq., Officiating Commissioner, Sitapur Division, to the Secretary to the Government of the North-Western Provinces and Oudh,—No. 3287, dated the 9th July 1888.

I have, after consulting the District Officers of this Division, the honour to reply to your No. 50S.—V-10B., dated 12th March 1888.

2. All these Officers, and indeed all Officers with whom I have ever talked on the subject, are of opinion that an immense deal of good can be done in villages in the direction indicated by the Government of India, provided that the Magistrates and the Boards obtain legal sanction for their action. There are few Magistrates who have not attempted to improve matters one way or another, but have been suddenly checked in their measures by the discovery that the judiciary is against them, *e. g.*, in select case No. LX, dated 22nd March 1883. In Fyzabad, at the expressed wish of Government, I endeavoured to introduce a few simple sanitary rules in half-a-dozen Court of Wards' villages. After repeated instances of disobedience, seven men were sent up to the tahsildar, who fined them four annas each. The Judicial Commissioner saw the cases in the monthly lists, called for the files, and ordered the fines to be refunded. After this the Magistrate at Fyzabad could scarcely be expected to interest himself much in village sanitation.

3. The Land-Revenue Acts of the Central Provinces appear to provide for the issue of rules such as those which are now being enforced by Mr. Mackenzie. Our Act has no such provision, and I think it is doubtful whether it is possible to attain the object aimed at by taking action under section 47 (*u*) and section 24 (*d*) and (*k*). However this may be, it is certain that it is quite useless issuing any rules, or giving any more advice upon sanitary matters, until the authorities who are to carry out the rules receive further support from legislation.

4. I do not think that there would be any danger of the District and Local Boards abusing their power under any rules that might be issued. The main danger would be that they would not enforce them strictly enough. Doubtless, the energy of the Board in such a matter would a good deal depend upon the extent to which the District Officers watched and guided their action.

5. It would certainly be possible under the rules to make some one or two men in each village responsible for the observance of them, and in ordinary cases these would be the lambardars of the village. These men would be held responsible for reporting breaches of the rules to the Boards, who will, if they think fit, sanction prosecution under the rules. The District Officers should have the power of calling for any of these reports, and of vetoing and modifying orders passed by the Board. Prosecutions would be laid generally before the tahsildar or benches of Magistrates, the more serious cases being referred to the Deputy Commissioner for orders.

6. The rules should, in no doubtful language, impose the duty of providing a pure water-supply and good village site drainage upon the landowners of the village. I do not think that the villagers should be called upon to contribute towards this. The liability of the villagers should be limited to obedience to the conservancy rules, and, if necessary, to the maintenance of a conservancy staff. But such a staff should only be necessary in exceptional cases, or in cases where the people display contumacy and refuse continuously to comply with the rules.

7. It is quite impossible for Government to attempt to provide funds for improving the sanitation of villages through an allotment to the Boards. Any system based on an admission

of the liability of the Boards or of Government to provide these funds would be doomed to failure from the outset. The owner or the owners of the villages must be held to be the person responsible for such village improvements. The cost in the aggregate would be considerable; but distributed over a large area and a number of years, it would not fall heavy upon any individual landlord, and with the help of the members of the Boards, the tahsildars, and the members of the district staff (all of whom should be *ex-officio* Sanitary Inspectors with power to report), we might hope to see in a few years an improvement in the rural sanitation, which would have a distinct effect upon the health of the country generally.

From Lieutenant-Colonel F. CURRIE, Commissioner, Rae Bareilli Division, to the Secretary to the Government of the North-Western Provinces and Oudh,—No. 1662, dated the 9th August 1888.

In reply to your No. 50 S.—V-10 B, dated 12th March last, I have the honour to state that there would be no difficulty in promulgating a few short and simple maxims of elementary sanitation, and to put up a copy of these in every village and enter them in every patwari's *roz-namcha*; but there is no existing machinery by which these rules could be enforced, without liability to abuse, which would probably make the remedy worse than the disease.

2. Such success as has been attained in municipal towns is only rendered possible by the proximity of latrines, sweepers, police, and conservancy darogahs, under the immediate supervision of the District and Subordinate Magistrates, tempered by fines under the bye-laws or the Police Act in force in such localities. These conditions do not exist in villages, and without them, or some substitute for them, I do not see what can be done.

3. The only agencies at present available are the Local Board, the Police, and the landholders: all these would at present, I consider, be inefficient and untrustworthy.

4. As regards rural areas, the first thing to do is to get an executive agency capable of enforcing the rules issued by the executive; and even then there will remain the question of funds, and even then under the most favourable circumstances as to agency and funds, and after certain patent drainage defects, like foul village ponds polluting the drinking-water in village site kutcha wells, have been removed, sanitation will have a hard battle with unfavourable climatic conditions, working on a population huddling together 700 and 800 to the square mile, utterly careless as to whether their ablutions are performed in pure water or in pools of slightly diluted sewage—a people without the faintest notions of the advantages of pure air or proper ventilation, and with the impurities of ages defiling the soil in the immediate vicinity of their dwellings.

5. Doubtless the nearest *arhar* field or patch of adjoining jungle used as a common latrine is offensive and may be noxious, more offensive perhaps than noxious; but stop this, and what will be the result? The people must go somewhere, and any pressure on this head, especially if it affects women and children, will tend to increase intra-mural latrines, the foulest and most certain sources of disease. Moreover, the present assessment on *goind* land has been fixed at a higher rate, because the lands near the village are better manured than those at a distance.

6. Mr. Irwin makes the following suggestion: I can offer no better—

"One suggestion, however, does occur to me, the adoption of which would, I believe, do good, and could scarcely do any harm. This is, that whenever a district comes under a re-settlement, a clause should be inserted in the *kabuliat* of every proprietor, binding him to maintain all villages included in it in a sanitary condition, and to carry out such rules as Government may from time to time issue. He should also be made liable to pay a sanitation cess of two per cent. on the revenue: so long as the village was kept fairly clean and the wells in good order, this cess should not ordinarily be levied. But it should be in the power of the District Magistrate, whenever he considered it desirable, to realize from a proprietor, as if it were an arrear of land-revenue, a sum not exceeding the amount of this cess for three years, and to apply the same to repairs or cleaning of wells, cutting down high grass and weeds in and about the village site, removing rubbish heaps, etc. The cess of course would be *mauzawar*, and each village would have to be treated separately on its sanitary merits: so long as a landlord did his duty, he would not be interfered with; but the liability to the sanitation cess would provide him with a motive for doing it, and the District Magistrate with a means of keeping himself to the work which neither of them at present possess."

7. The difficulties to be overcome are numerous and formidable—all the more reason for doing our utmost to overcome them; but this cannot be done by merely issuing rules in the spirit of the instruction of the Government, and leaving the present agency to enforce these rules.

8. I regret the delay there has been in replying to your letter under reference; but I was away on leave a part of May and all June, and this must be my excuse for not answering this reference earlier.

No. 8.] From F. C. ANDERSON, Esq., C. S., Offg. Secretary to the Chief Commissioner, Central Provinces, to the Secretary to the Government of India.—No. 275—386, dated Nagpur, the 16th January 1889.

The Chief Commissioner has had under his consideration the Resolution of the Government of India in the Home Department, No. 3—212-225, of the 27th July last, dealing with the question of urban and rural sanitation. He thought it desirable, in the first instance, to consult the Deputy Surgeon General (who is also Sanitary Commissioner for the province), Commissioners of Divisions, and the Superintending Engineer, as to the practicability of giving effect to the views of the Government of India in these provinces. With the exception of Dr. Loch, late Sanitary Commissioner, all the Officers consulted are of opinion that the creation of a Sanitary Board, as a consultative and executive agency under the Local Administration, would be a hindrance rather than a help to the cause of sanitary reform. In a small province like the Central Provinces, where the Chief Commissioner himself holds in his hand all the guiding lines of administration in every department, the transfer, and even the partial delegation, of his responsibility with the direction of details to a Board would tend only to weakness and the multiplication of correspondence. Even Dr. Loch admits that in respect of the sanitation of rural areas a Board would be unable to do more than leave matters to the District Officer working under the local rules, to which further reference will be made below. It is only in respect of the sanitation of municipal towns that he thinks the control of a Board would perhaps be useful. But all the ends proposed can, the Chief Commissoner believes, be better met by other arrangements, which will be explained in this letter. The Board could only be constituted here by appointing to it the Sanitary Commissioner and the Superintending Engineer, who are already the advisers of the Chief Commissioner in the matters which would be entrusted to the Board. There are no Officers who could be spared to devote themselves specially to the work of the Board, and every Officer in the Commission is already overworked in the discharge of his ordinary duties, and there are no non-official persons on whom reliance could be placed for assistance.

2. Mr. Mackenzie is quite ready to admit that the work of the Sanitary Department in these provinces requires to be systematized and stimulated. He has already done something to improve matters in rural areas, and has pressed the question of sanitary reform upon the municipal towns; while in the draft Bill for amending the Municipal Act, which is before the Government of India, a chapter dealing with village conservancy has been incorporated, which ought to effect something for the smaller towns and villages. What is chiefly required now is that the work should be placed everywhere upon systematic lines, and be organized in a manner suited to the circumstances of the province.

3. The weak point in the present system is well described by Mr. Fraser, Officiating Commissioner of Chhattisgarh, in a letter,* with all of which the Chief Commissioner entirely concurs, and a copy of which I am to annex for the perusal of the Government of India. The Sanitary Commissioner spends his time in long tours of dispensary and vaccination inspection, in the course of which he writes "Notes" upon the sanitary condition of the towns and villages he may visit. These notes are furnished to the local authorities for information, but carry with them no binding authority, and are, it is to be feared, but little attended to. Mr. Mackenzie would propose now to order that the Sanitary Commissioner must take up his proper position as the head of an Executive Department of the Administration. If his position as such were made clear, he would be able, like other Heads of Departments, to issue orders and call for explanations and reports, where hitherto he has only made suggestions to local officers and local bodies. In the course of his tours he should, as Mr. Fraser suggests, see and confer with the District Officers and local bodies, reporting the result to the Chief Commissioner in his tour diary or otherwise. The Superintending Engineer would be at hand for reference in all matters requiring engineering skill or advice, and through him the services of the Executive Engineers and ther Officers of the Public Works Department would become available for the examination of local conditions. This is the simple form of organization which appears to the Chief Commissioner most suited to the requirements of a small Administration like this.

* No. 6947, dated the 11th September 1888.

4. For the rest, Mr. Mackenzie would propose to set about a careful sanitary survey of each municipal town in the province, embracing its present water-supply, both as regards quantity and quality; its drainage system, and its conservancy system. Maps on a large scale would be prepared, and schemes for the necessary local improvements be gradually worked out, the question of funds receiving special consideration in each case.

5. In the larger villages the Chapter in the new Municipal Bill, expanded if necessary, will enable the District Officers to take action. Village Punchayets will, in time, be formed in these, through whom simple rules of conservancy may be enforced. In the smaller villages there is already the agency of the *mukaddams* working under orders,

Revenue Circulars of the 23rd December 1885 and the 8th July 1887.

copies* of which I am to enclose. The Deputy Commissioner, the Civil Surgeon, and the District Superintendent of Police might be instructed to draw up a sanitary report on the condition of each important village visited by them, and submit it for the information and orders of the Sanitary Commissioner. Local Board Members might also be made use of in this way, and should certainly be encouraged to look after the carrying out of orders in villages within their jurisdiction. But too much must not be expected from this agency. If it is driven too hard, it will simply meet the pressure by wholesale resignation. *Not printed.

6. The Chief Commissioner believes, from his own local enquiries, that a great deal has been done in these provinces to spread a knowledge (to say the least) of the most important sanitary principles. He has not come across a single village where the *mukaddam* was unable to point out the area outside set apart for purposes of nature, or the tank (where tanks exist) reserved for drinking purposes. The wells are always reported to be regularly cleaned. In many villages something of a conservancy establishment is kept up. We may be sceptical as to the observance of the rules, but it is something to have got the rules known and recognized—and by degrees, through judicious insistence on the part of Government Officers, they will come to be better obeyed. The Sanitary Primer is taught in every village school, and the rising generation at any rate knows what ought to be.

7. If, after considering what the Chief Commissioner has now submitted, the Government of India insist on the creation of a Sanitary Board, the Chief Commissioner will endeavour to meet their wishes, but he thinks, very decidedly, that better results would be attained if he is left to carry out their general policy in the way above suggested.

From A. H. L. FRASER, Esq, C. S., Officiating Commissioner, Chhattisgarh Division, to the Secretary to the Chief Commissioner, Central Provinces,—No. 6947, dated Raipur, the 11th September 1888.

I have the honour to acknowledge receipt of your letter No. 5064—238, dated the 25th ultimo, and the Government of India Resolution on Sanitation forwarded therewith. Mr. Tara Das Banerjee, Secretary, District Council, Raipur, has favoured me with a Note on the matter, copy* of which I forward. As I have been asked to give the matter early consideration, and no spare copies of the Resolution were sent, I have not formally consulted anyone else.

* Not printed.

2. The Government of India in the Resolution under consideration briefly indicate the measures which have been taken to promote sanitation, and the partial success which has attended them. The main obstacle in the way of sanitary progress has been "the ignorance of the masses and their dislike to any change of custom." There is no doubt that a good deal has been done, by patient effort in education and official influence, to overcome this obstacle. But it is only too painfully evident that comparatively but little influence has been exerted over the great mass of the people. Perhaps this is at least not less painfully evident in this Division than in the rest of the province. The people in the more backward tracts are still ignorant of the advantages of sanitation. They are generally willing to please the Deputy Commissioner as far as they can, even to the gratifying of his—to them—strange sanitary whims. But this feeling carries them only so far as to have a good cleaning up when they hear of an approaching visit. The more forward policy, now advocated, must in such tracts be still "cautious and tentative."

3. At the same time there is no doubt that progress in sanitation and kindred matters ought to be, so to speak, by geometric, rather than arithmetical, progression. That is, the more advance is made, the more vigorously it should be possible to push reform. In municipalities it is possible in this province now to push sanitation very vigorously. I see no reason why any sanitary measure, for which funds are available, should be postponed, simply on the ground of the attitude of the people within municipalities. They have learned quite enough to know that sanitary reform is a good thing, though they have not in many cases acquired enough of enthusiasm to carry out reform for themselves without some pressure. They quite understand that Government should insist on sanitation, and that the cost of sanitary measures should be met from municipal taxation. Sometimes they are themselves ready to do whatever is shown to be necessary; and in all other cases they are quite willing to be pressed. I do not think then that municipal sanitation in this province need present any real difficulty as far as the attitude of the people is concerned.

4. In regard to district sanitary work, however, I think that there is much more difficulty in the attitude of the people. This is due mainly to the fact that village sanitation has not received any thing like the attention which has been bestowed on municipal sanitation. In municipalities there has, of course, been stronger and more consistent pressure bearing on the

people in regard to sanitation. This has been an education which has not been shared by the rest of the district. The ignorance and apathy of the people generally has, therefore, been much less affected outside municipalities. At the same time, even in rural tracts, the people are not where they were on this question, and more direct and vigorous action is possible than formerly.

5. As is stated in the Government Resolution under discussion, it is necessary in considering the measures most calculated to promote sanitary reform, to direct attention to the question of executive agencies and to the question of funds. In discussing these questions I shall not begin by considering the proposed central agency, but shall deal first with local agency.

6. In regard to municipalities, the local agency is ready to hand in the Municipal Committee. The existing Municipal Act (XI of 1873) provides the Committees with power to pass sanitary rules which can be enforced by process in the Criminal Courts (section 14). It provides them with power to raise funds (section 7) and to devote these funds, in part at least, to sanitary improvement (section 11): and it provides the Local Administration with large powers of control (sections 6 and 17), though this control might perhaps be made more direct by providing (on the analogy of section 31 of the Local Self-Government Act, I of 1883) that the Chief Commissioner may have any necessary measure which may be neglected by the Municipal Committee carried out at their expense. This seems to me to provide a quite adequate local agency for municipal sanitary work. It also provides funds for all reasonable sanitary reform. All that is locally required is, on the one hand, earnest and sympathetic co-operation with the Committee on the part of the Deputy Commissioner and his subordinates (especially among these the Civil Surgeon), and, on the other, that the Committee should fully use the powers the law provides. No new agency is required.

7. Outside municipal areas there are three quite distinct classes of cases to deal with. These are (1) the small towns or large villages, (2) the lesser villages with more than, say, 50 of a population, and (3) the smallest villages.

8. In regard to the first of these three classes, what is required is a simpler form of the present municipal agency; and I hope that the Chief Commissioner will be able to provide for this in his proposed amendment of the Municipal Act. It should be possible for the Chief Commissioner to establish a Committee or Board in any large village, with power to raise by local taxation the funds necessary for sanitary improvement, and even with power to enforce necessary and reasonable sanitary rules, without throwing on them any other responsibility or the burden of an elaborate constitution. In this way the system of municipal government, which has, beyond all question, been attended with excellent results, would be cautiously extended. I have known cases where leading townsmen in small towns have asked for some such constitution; but it has not been thought possible to grant it under the existing law.

9. In regard to the second case, that of ordinary villages, I think they are really sufficiently dealt with by the "Rules for Village Sanitation" issued by the Chief Commissioner under Revenue Book Circulars I—18 and I—24. The only question is, will the *mukaddams* take the initiative contemplated in these Rules? It may be generally stated that they will not do so of their own motion, and that they will do so when asked by the Deputy Commissioner. I say, as a general rule, *mukaddams* will move if the Deputy Commissioner points out to them the necessity for doing so, and if (as indicated below) the responsibility of the *mukaddam* for any actual failure of his own can be enforced. Colonel Thomas, who has looked into this matter carefully, concurs with me in this view. I am not therefore anxious to see the "stronger coercive powers," referred to in paragraph 5 of the later of these two Circulars, given to Deputy Commissioners, until the rules as they at present stand have had a fair trial. These rules are a great advance on all previous action regarding rural sanitation. I cannot advocate any immediate change in the system which they have practically inaugurated.

10. In regard to the third case, that of the smallest villages, the want of funds, and usually also the want of an intelligent head to the village community, renders it impossible to do much. But, as stated in Revenue Book Circular I—24 (paragraph 3), the consequences of insanitary conditions are not likely to be so serious in very small villages, and sanitary improvements there may be left, for a time at least, to the influence of example and precept.

11. In both of the last two cases, *i. e.*, in all cases in which it is not possible to appoint a special agency for the purpose of sanitation (such as a town or village committee), it is necessary to be able to enforce the responsibility of the *mukaddam*. Under the law he is bound to keep his village in good sanitary condition, subject to any rules issued by the Chief Commissioner. But in practice it has been found sometimes difficult for want of any effective sanction to enforce responsibility of any kind in respect to *mukaddams*. This matter is receiving attention in connection with the proposed amendment of the Land-Revenue Act. I hope that the difficulties which have been experienced in this respect may be removed by the proposed legislation.

12. As to the assistance to be rendered by District Councils and Local Boards in this matter, I am not inclined to think that they can be expected to take much direct action. I think that the system contemplated by the "Rules for Village Sanitation", above referred to, is, for the present at least, preferable to a system which would throw the burden on the District Council and Local Boards. These bodies have as much to do as they can well be expected at present to carry out, without this additional duty. The rules provide an agency and also fund for carrying out sanitary improvement on a simple and effective system. I would not alter this. But at the same time I think that District Councils and Local Boards may render a good deal of indirect assistance. There is a natural objection on the part of members of these local bodies to make themselves unpopular, by adopting coercive action in respect to unpopular measures. But they are for the most part men of local influence and authority. They may therefore be very useful in inducing the people to co-operate with the Government in sanitary reform. I think the Deputy Commissioner and Civil Surgeon should take pains to be personally acquainted with all members of these local bodies, and patiently to instruct them individually in the importance of sanitation and the special requirements of their circles. When any of these members is at head-quarters, or when the Deputy Commissioner or Civil Surgeon is in his circle on tour, he should be made to feel that the Officers of Government look on him as a coadjutor and value his assistance. I am sure that much good might be done in this way.

13. I come now to consider the question of a Central Sanitary Board. The proposal contained in the Resolution to have a Central Sanitary Board "composed of an Officer of approved administrative experience, the Sanitary Commissioner for the province, and an Officer of the Public Works Department skilled in Sanitary Engineering," seems to me out of proportion alike to the requirements and to the financial capabilities of this province. There are three Officers to form this Board—

(1) an Officer of the Commission;
(2) an Engineer;
(3) the Sanitary Commissioner.

It can hardly be meant, in such a province as this, to have the first two Officers special men. The Chief Commissioner could hardly afford to add another Engineer to the Public Works Secretariat staff only for sanitary work; and he can easily see that one of his present staff shall work along with the Sanitary Commissioner in discussing any proposals involving at once sanitary and engineering science. This does not require to be specially provided for.

14. In regard to the Officer of the Commission, I do not think that any local Officer at head-quarters, even "of approved administrative experience," should deal with all sanitary questions affecting other parts of the province; and I do not think that the province could afford, or find adequate employment for, a special Officer of this class to serve on the Board. I have been indeed sometimes inclined to think that it would have been almost worth while to have appointed, temporarily at least, a special Officer to go round to every district and, on the spot, concert with the Deputy Commissioner the best measures for giving effect to the local self-government policy, and for carrying out local improvements of all classes. But I do not think that this is specially necessary in sanitary matters. What is really required is to make the present central agency more efficient.

15. I am not certain that sanitary work in this province gained much by the abolition of the old Sanitary Commissionership, to which local Medical Officers looked forward as a Departmental prize, and for which certain Officers would more and more have striven to qualify themselves, and to which they came with local experience and local sympathy. But I should travel beyond my province if I were to discuss this. It is enough to say that, as by far the most important work of the Central Provinces' Deputy Surgeon-General is sanitary work, the Officer appointed to this province should be selected for special qualifications in sanitary science and for special fitness to carry out practical reform. Unless this is done a very valuable appointment is wasted.

16. It is also of the greatest importance that the position of the Sanitary Commissioner should be clearly recognized. I do not think that this is at present done. Or rather, the position he holds is not one in which he can do any real good with our population. He ought to be recognized as the Head of the Sanitary Department, in which, not Civil Surgeons merely, but Deputy Commissioners, are his direct subordinates. If it is desired to see precisely what I mean, let the position of the Deputy Surgeon-General be contrasted with that of the most junior of all Heads of Departments—the Excise Commissioner. The Excise Commissioner does not criticize from without and make suggestions. He forms a part of the administrative machine; and he issues his orders which Deputy Commissioners must carry out, or (in case of difference of opinion) refer to higher authority.

17. As an illustrative case, let the tour of these two Officers be compared. Nothing, I think, shows the feebleness and inutility of the Deputy Surgeon-General in his present position more clearly. The Deputy Surgeon-General makes a tour of inspection in a district. He meets the Civil Surgeon and goes round the streets and latrines of the municipal town with him. He goes round a certain number of villages by a course which he has planned and announced, and he talks a little sanitation with the *malguzars*, who regard him as a kindly but whimsical old gentleman. Then he writes two Minutes. One of these is forwarded by the Deputy Commissioner to the Secretary, Municipal Committee, who perhaps files it. On the other, memoranda are perhaps written for the tahsildar, who determines (if the Minute has been unfavourable) to be more careful on the occasion of the next visit of a Deputy Surgeon-General. This is criticism from without.

18. The Excise Commissioner comes to a district. I speak from some experience of the office. He sees a good deal of the Excise Darogah and the leading Kallars. He also wanders about making himself acquainted with the state and requirements of the district in excise. In all this he is like the Deputy Surgeon-General; but now comes the difference. Having completed his tour, the Excise Commissioner sees the Deputy Commissioner. He discusses every question that has arisen on his tour till it is settled. There and then definite orders issue, the result of the personal inspection of the Excise Commissioner and the local knowledge at the Deputy Commissioner's command. There is some definite improvement to show: if any fault has to be found, the remedy has also been decided on.

19. I see no reason why this should not be the case with the Deputy Surgeon-General. He should never leave a district without meeting the Deputy Commissioner who is responsible for all the district administration, and discussing the results of his inspection with him. Or, if he cannot conveniently see the Deputy Commissioner before leaving the district, he should arrange to meet him soon after, as the railway now runs nearly all over the province. What he has of fault to find should be pointed out, and the remedy should be found there and then, if there is a remedy. If the Municipal Committee are also concerned, they should be taken into the consultation, if possible, so as to prevent useless correspondence hereafter. This is the only way to secure practical progress. It is useless for the Sanitary Commissioner to go about applying his ideal standard, and writing everywhere more or less emphatically the same condemnation, "*come short.*" The amount of necessary reform, which is also at the time practicable, should be instantly decided on and carried out.

20. I really do not think that in this province there is any need of new agency. If the Deputy Surgeon-General means business, and is vested with authority to call on the Deputy Commissioner to give effect to his suggestions as far as they are practical, no agency is (at present at least) required beyond the Deputy Commissioner advised by his Civil Surgeon and Executive Engineer and assisted by his Municipal Committees, Town Boards, and Village Sanitation Rules. If this agency were properly utilized, quite adequate progress could, for some considerable time, be made.

[No. 9] From C. G. BAYNE, Esq., C.S., Officiating Secretary to the Chief Commissioner of Burma, to the Secretary to the Government of India, No.—795—31S., dated Rangoon, the 30th November 1888.

In reply to your letter No. 4—330, dated the 31st October 1888, I am directed to submit a copy of the Chief Commissioner's Resolution No. 31S, dated the 30th November 1888, which sets forth the action taken in Burma with regard to the establishment of a Provincial Sanitary Board.

Extract from the Proceedings of the Chief Commissioner, Burma, in the General Department,—
No. 31S., dated the 30th November 1888.

READ—

Home Department Resolution No. 3—212-225 dated the 27th July 1888.
Letter No. 491—73, dated the 29th September 1888, from the Sanitary Commissioner, Burma.
Letter No. 1723—332, dated the 8th November 1888, from the President, Rangoon Municipality.

RESOLUTION.—In the Resolution cited in the preamble the Government of India discusses the question of sanitation in rural and urban tracts, and indicates the measures which should be taken to promote the cause of sanitary reform in India. It is pointed out that considerable progress has been made, during recent years, in the introduction of sanitary improvements in towns, and that the establishment, of municipalities, with wide powers in sanitary matters, has provided an agency for carrying out such improvements. In rural tracts, on the other hand,

owing to the indifference of the people and to the want of an executive agency, little has been done. The Government of India has now decided that a step forward shall be made, which will take the form of the establishment of Sanitary Boards in each province. These Boards will be composed of an Officer of approved administrative experience, the Sanitary Commissioner for the province, an Officer of the Public Works Department skilled in sanitary engineering, and one or more non-official members. Commissioners of Divisions will be *ex-officio* Members of the Board, when dealing with questions connected with their Divisions.

2. The Chief Commissioner has consulted the Sanitary Commissioner on the subject of the establishment of a Sanitary Board and has decided to appoint the following gentlemen, who have intimated their willingness to accept seats at the Board, Members of the Burma Sanitary Board :—

Mr. F. W. R. Fryer, C.S., Financial Commissioner, *President.*
Dr. Sinclair, Sanitary Commissioner . . . } *Members.*
Mr. D. Joscelyne, Assistant Secretary to the Chief Commissioner, Public Works Department. } *Members.*
Mr. O. D. Clark, Engineer to the Rangoon Municpality. } *Members.*

Commissioners of Divisions in Lower Burma will be Members of the Board so far as matters affecting their Divisions are concerned. Upper Burma will not be included within the scope of the Board's labours, as the time is not yet come when the question of sanitation in that province can be usefully considered.

3. It remains to discuss the functions and duties of the Sanitary Board established in the foregoing paragraph. In paragraph 5 of the Resolution of the Government of India it is laid down that the Sanitary Board should be the agency through which the Local Governments can operate, and to which, subject to the control of the Local Government, should be entrusted the control and supervision over sanitary works, whether undertaken in urban or rural areas. It will be convenient to consider separately the question of the action of the Board in connection with urban, and in connection with rural areas. In Lower Burma, municipal government has made considerable progress. Almost all towns of considerable size in the province are municipalities, and have power under the Municipal Act to spend their income on sanitary purposes, in such manner as they may see fit. All towns spend more or less on these purposes, and it is believed that Municipal Committees are alive to the importance of introducing proper systems of sanitation into their towns. The question of sanitation in Lower Burma municipalities has received much attention during the last six months. The Government of India suggested in their remarks on the Burma Municipal Report for 1886-87 that a sanitary survey should be undertaken of all Lower Burma municipalites, and Municipal Committees have seen consulted on the suggestion. The outcome of the replies of Municipal Committees to the reference made to them, has been a proposal to employ a specially qualified Engineer to prepare, in consultation with the Sub-Committees of the municipal bodies, plans and estimates of all the sanitary works required to bring the towns concerned into a thoroughly sanitary condition. This proposal is set forth in General Department Resolution No. 20G. M., dated the 15th October 1888, and is now being considered by Municipal Committees. When the Engineer, who is to be deputed to carry out the survey, commences his work, the Chief Commissioner proposes to place him under the orders of the Sanitary Board, which will be at liberty to issue such orders to him as it may see fit concerning the manner in which he shall carry out his duties. When plans and estimates have been finally approved by municipal bodies, they will be submitted to the Local Government through the Sanitary Board. Detailed orders on this subject will be issued when the Special Engineer has been appointed. For the present it will probably not be necessary for the Sanitary Board to take any action in connection with sanitation in municipal towns.

4. The question of sanitation in rural tracts in Burma presents many difficulties, and is not a matter of such urgent importance as sanitation in towns. Rural Burma is thinly populated. The people live in small villages and are but little exposed to the evils which arise from the congregation of large masses of human beings into small spaces where all sanitary laws are disregarded. As a result, probably, of the mode of life of the country people, the death-rate of Burma is low, except in malarious tracts and on the occasion of outbreaks of epidemic cholera. Hence it is difficult to bring home to the people the importance of obedience to sanitary laws which, so far as they are able to judge, they and their forefathers have violated with impunity. Another obstacle to the promotion of sanitation in rural tracts is the absence of means. The machinery which exists in parts of India for raising money locally for local needs does not exist in Burma outside municipal towns. The only source whence means can be derived for executing sanitary works, is the district cess fund. But the greater portion of the income of this fund is swallowed up in providing for rural police, rural education, and district post. When

local requirements under these heads have been met, but little remains to be spent on sanitary works. Further, the local agency which exists in most parts of India for carrying out sanitary improvements is to a great extent wanting in Burma. Orders were issued in 1884 in General Department Resolution No. 1 G. M., dated the 23rd January 1884, for the establishment of rural boards, and since the date of that Resolution rural boards have been established, and have been in operation in most districts in the province. Their powers of usefulness have, however, been very greatly hampered by want of funds. The sums at their disposal for expenditure on local sanitary works have been so small that it has seldom been necessary to call them together or to consult them. The Bill now before the Government of India for the establishment of a village system, and to amend the law relating to rural police in Lower Burma, provides for the appointment of headmen, among whose duties will be the care of the conservancy of the village.

5. In the foregoing paragraph the Chief Commissioner has stated briefly the difficulties which impede the promotion of sanitation in rural tracts in Burma, not because he wishes to over-estimate the difficulties of the situation, but because he considers that difficulties must be clearly realized before they can be met. Briefly stated, the obstacles in the way of sanitary progress in rural Burma are the apathy of the people, the want of funds, and the absence of a local agency qualified to advise and to direct. The first duty of the Sanitary Board will be to consider what measures should be adopted to overcome these obstacles. The first step to be taken is to ascertain what is at present done in the matter of sanitation in rural tracts. The Chief Commissioner suggests to the Board that they should ascertain from District Officers what expenditure was incurred in their districts during the last year in sanitation, what sums are now available for such expenditure, and what use has been made of local boards for the purpose of deciding the manner in which money shall be spent. District Officers might also be asked to make suggestions for adding to the sums available for expenditure on sanitation, and for increasing the usefulness of rural boards as consultative bodies. After they have received the advice of local officers, the Board will probably be in a position to frame a programme of sanitary work in rural tracts, and to lay down some general rules as to the development of local resources, the employment of local funds on sanitation, and the constitution of rural boards. The Chief Commissioner will expect to be favoured with the result of the Board's deliberations in six months' time. A copy of this Resolution will be forwarded to all Commissioners, Deputy Commissioners, and Municipal Committees in Lower Burma. The Chief Commissioner requests that all District Officers and local bodies will answer promptly any calls for information, or advice made on them by the Sanitary Board.

[No 13.] From F. C DAUKES, Esq., Officiating Secretary to the Chief Commissioner of Assam, to the Secretary to the Government of India,—No. 7518, dated Shillong, the 28th December 1888.

With reference to paragraph 5 of the Resolution of the Government of India, No. 3—212-225, dated the 27th July 1888, on the subject of the practical application of sanitary principles to towns and villages in India, I am directed to forward, for information of the Governor General in Council, copy of Circular No. 58, dated the 4th December 1888, which has been addressed to all Deputy Commissioners in this province, and which indicates the steps taken by the Chief Commissioner to give effect to the wishes of the Government of India in regard to village sanitation.

2. Copy of a Notification No. 336, appointing a Sanitary Board for this province, is also annexed for the information of his Excellency in Council.

From F. C. DAUKES, Esq., Officiating Secretary to the Chief Commissioner of Assam, to all Deputy Commissioners (in Assam Valley Districts through Commissioner), Circular,—No. 58, dated Shillong, the 4th December 1888.

I am directed to inform you that the observations made by the Chief Commissioner in his Resolution on the Sanitary Report for the year 1887, on the subject of village sanitation, and his proposal to defer for the present the establishment of anything in the way of a systematic scheme of village sanitation, do not commend themselves to the Government of India.

The Governor General in Council considers that a beginning should be made of this work, so far as the circumstances of the province admit, and it accordingly remains for District Officers loyally to co-operate, as the Chief Commissioner is himself determined to do, in giving effect to this view.

2. As a first step in this direction, the Chief Commissioner has, in making the usual grants-in-aid from Provincial revenues, to such Local Boards as need them for the year 1889-90, appropriated a sum of Rs. 18,000 for this purpose, which has been distributed as shown in the statement appended to this letter.

North Sylhet, Sunamganj, and Habiganj.

The Boards noted in the margin are independent of aid from Provincial revenues, and though they have already appropriated the whole of their income for the year 1889-90, the Chief Commissioner has no doubt that when re-appropriations are being made, as they always are in the working out of Local Board Budgets, the Deputy Commissioner will be able to induce them to devote something to the same purpose.

The same remark applies to the six remaining Local Boards, namely, North Lakhimpur, Golaghat, Nowgong, South Sylhet, Karimganj, and Hailakandi, to which, though they are receiving aid from Government on other accounts, the Chief Commissioner is unable to make any grant this year for village sanitation.

3. As regards the first steps which should be taken for the introduction of sanitary reform in villages, the Chief Commissioner is disposed to think that, both with a view to preventing the small amount of money available being frittered away over an immense surface, and to avoiding the dangers indicated in the Chief Commissioner's Resolution above referred to, the best plan will be to begin with villages situated so near district or sub-divisional head-quarters, as to be within the compass of a morning ride, and thus within the reach of close supervision. And I am to say that the objects to which, in the Chief Commissioner's opinion, attention should first be directed are—

(1) the provision (when necessary) and protection in all cases of water-supply;
(2) the establishment and maintenance of a proper system of drainage; and
(3) the prohibition of the deposit of manure and other refuse in quantities and in places where they are likely to be a source of danger to the health of the neighbourhood.

4. As regards the first of these objects, some further remarks seem necessary. It will be found in some cases that streams containing water, fit for drinking, are already available, and in that case it will be sufficient to mark off a certain length up-stream, to be reserved for drinking purposes only, prohibiting bathing, the watering of cattle, and the washing of clothes there. When it is necessary to provide a source of water-supply, the Chief Commissioner would say that, as a rule, wells, if the people are willing to use them, are to be preferred to tanks, as, if the former are properly constructed with raised masonry platforms, and if the ground around them is at the same time properly drained, little or no supervision is needed to protect them against being fouled. They, moreover, cost comparatively little.

Where no stream is available, and the people cannot be persuaded to use wells, it will be necessary to look to tanks; and though it would be difficult, with the limited funds at present available, to do much in the way of constructing new tanks for drinking purposes, of a size which would be safe from a sanitary point of view, it would frequently be possible to find existing tanks which, on being cleansed and deepened and protected against foul drainage, would serve the purpose.

5. When the above measures are introduced in any circle of villages, it would be desirable to appoint, as a sanitary inspector, a trustworthy man, say, on Rs. 25 per mensem, who would constantly move about the villages, and, with the aid of the gaonbura or chaukidar, see to the enforcement of the conditions they involve and to the general sanitary state of the villages. At first, and pending the extension of the scheme, it would be desirable, if possible to arrange, where there is a municipality, union, or station at the head-quarters of the district or sub-division, that one person should be appointed to discharge the duties of sanitary inspector, both in the town or station, and in the villages around it.

It need hardly be added that close and constant supervision from the Officers of the head-quarters of the district or sub-division would be needed.

6. As regards the enforcement of the simple restrictions which the measure will involve, the Chief Commissioner believes that, at starting, the ordinary law relating to nuisances will be found sufficient; but, if any difficulty should arise, he will be prepared to take such steps as may seem requisite for its removal.

7. The Chief Commissioner will be glad if you will take the earliest opportunity of bringing this matter before the Local Boards of your district, and will report, early in March, on the measures which it is proposed to take, so that there may be no delay about carrying them out in the beginning of the new financial year, when funds will become available. If you should find that, from savings or otherwise, funds can be made available during the current year, so much the better, and, in that event, your report should be submitted, without waiting for the time above specified.

8. When the reports called for in the foregoing paragraph have been received, the matter will be further dealt with by the Sanitary Board, which the Chief Commissioner will shortly appoint for the purposes indicated in paragraph 5 of the Resolution of the Government of India

(Home Department) No. 3—212-225, dated the 25th July 1888. Meantime, though provision is made for this matter in the Public Works portion of the Local Board budgets, the correspondence regarding it will be conducted in this department.

Statement showing the appropriations made for Village Sanitation during 1889-90.

1. Dibrugarh	Rs. 2,000 each=14,000	
2. Sibsagar		
3. Silchar		
4. Gauhati		
5. Barpeta		
6. Dhubri		
7. Goalpara		
8. Jorhat	Rs. 1,500 each=3,000	
9. Mangaldai		
10. Tezpur		1,000
	TOTAL	18,000

Notification by the Chief Commissioner of Assam, No. 336, dated the 10th December 1888.

The Chief Commissioner hereby establishes a Sanitary Board for the Province of Assam, for the purposes indicated in paragraph 5 of the Resolution of the Home Department, No. 3—212-225, dated the 27th July 1888, and declares that the said Board shall be composed of the Officers for the time being holding the following appointments:—

MEMBERS.

The Deputy Surgeon General, Assam District.
The Secretary to the Chief Commissioner, General Department.
The Secretary to the Chief Commissioner, Public Works Department.
The District Staff Officer, Assam District.

SECRETARY.

The Assistant Secretary to the Chief Commissioner, General Department.

[No. 11.] From F. E. K. WEDDERBURN, Esq., Secretary to the Chief Commissioner of Coorg, to the Secretary to the Government of India,—No. 2121—1708, dated Bangalore, the 4th December 1888.

I am directed to acknowledge the receipt of your letter No. 4—332, dated the 31st October 1888, and to say that the Officiating Chief Commissioner has sanctioned the establishment of a Sanitary Board for Coorg consisting of—

The Commissioner of Coorg.
The Executive Engineer of Coorg.
The Civil Surgeon of Coorg.

I am to add that the Civil Surgeon will make periodical tours of inspection and submit his report to the Board, which will take such action as may be necessary. The Board has also been instructed to place itself in communication with the Sanitary Commissioner with the Government of India.

[No. 12.] From G. S. FORBES, Esq., Secretary for Berar to the Resident at Hyderabad, to the Secretary to the Government of India,—No. 490 G., dated Hyderabad Residency, the 23rd November 1888.

I am directed to acknowledge your letter No. 4—333, dated the 31st October 1888, enquiring what action has been taken in the Hyderabad Assigned Districts with regard to the establishment of a Provincial Sanitary Board.

In reply, the Resident desires me to forward, for the information of the Government of India, a copy of the correspondence noted in the margin. It will be observed that, owing to the smallness of the province, it is not considered necessary to form a Provincial Sanitary Board; but instructions have been issued for the creation of a Sanitary Board for each District, with subordinate local boards for each village, not being a municipality.

1. Extract, paragraph 3, from the letter No. 509 G., dated the 5th October 1888, from Commissioner, Hyderabad Assigned Districts.
2. Letter No. 3252 R., dated the 23rd November 1888, to the Commissioenr, Hyderabad Assigned Districts.

Extract, paragraph 3, of letter No. 509 G., dated 5th October 1888, from the Commissioner, Hyderabad Assigned Districts, to the Secretary for Berar to the Resident at Hyderabad.

Para 3.—With reference to paragraph 4 of your letter, I would point out that this province is very small, and that there is no present necessity for a Sanitary Board. We know, or can easily find out, what is required to be done, and a Board would not help us to do it. Any large schemes—and they cannot be many—would be considered from every point of view, and for those we have the Sanitary Commissioner and Engineers to refer to, but the main sanitation must be enforced by District Officers using their influence through village officers and rural Boards.

From G. S. FORBES, Esq., Secretary for Berar to the Resident at Hyderabad, to the Commissioner, Hyderabad Assigned Districts, Amraoti,—No. 3252, dated Hyderabad Residency, the 23rd November 1888.

I am directed to acknowledge your letter No. 509G., dated the 5th October 1888, regarding the measures to be adopted in Berar for the promotion of sanitary reform in towns and villages.

2. In so small a province as Berar, the Resident considers that it is unnecessary to constitute a Central Board through which the Local Government may operate. The main principles of Indian sanitation are now well known, and are not a matter for centralization, but for careful and persistent local administration. The wants of the districts will, in the Resident's opinion, be best met by the creation of an *ex-officio* Board for each district, composed of the Sanitary Commissioner as President, the Deputy Commissioner, and the Executive Engineer. Good work ought to be expected from this District Board, as it will bring to notice sanitary defects at the head-quarter stations and in all municipalities, and will suggest and urge the best remedies which available funds permit. The Board will keep a formal record of its meetings and proceedings, to be filed in the Deputy Commissioner's, Kutcherry, where it will be available for the Commissioner's inspection and orders.

3. The Resident further proposes to form in each village, not being a municipality, a subordinate local Board consisting of the patel, the patwari, and any one influential man of the village who is willing to serve, and whom the Deputy Commissioner may consider likely to take an interest in the work. The village Boards will be undert he general supervision of the District Board and will be appointed by the Deputy Commissioner of the district concerned; they will be informal and quite voluntary, and should form a centre of some sort of responsibility for the observance of the published rules of simple village conservancy. Where there is already a local Board in any village or municipality, there conservancy should be added as the most important of its duties. It may be too much to expect useful results from many of these Boards, but good work may be produced by some of them; and in this hope, and in view of the example it may set, the Resident is desirous that the experiment should be made wherever the village is of sufficient size and importance to provide the requisite agency as above suggested. It would be well if the details of this arrangement could be carried out by the Deputy Commissioner in person or by his Assistant, during the ensuing cold weather; and, in future, when good work is done, it should be noticed in the Sanitary Report and encouraged.

From A. P. MACDONNELL, Esq., C.S.I., Secretary to the Government of India, to the Chief Secretary to the Government of Madras,—No. 211, dated Simla, the 5th July 1889. [No. 13.]

Dated the 27th July 1888.

I am directed to acknowledge the receipt of your letter No. 1914L., dated the 17th October last, communicating remarks on the opinion expressed by the Government of India in paragraph 5 of the Home Department Resolution, marginally noted, that a Sanitary Board should be established in each province and be entrusted with the control and supervision over sanitary works, whether undertaken in urban or rural areas.

The Madras Government is, for reasons stated in your letter, opposed to the creation of a Sanitary Board, but accepts the proposal to appoint a special Engineer, who should be an expert in sanitary science, for the purpose of acting as adviser to Municipalities and Local Boards in all important matters relating to sanitary engineering.

His Excellency the Governor in Council considers that the appointment should be a special one, that the Officer should be attached to the Local and Municipal Department of the Chief Secretary's office, and unconnected with the ordinary Public Works Department; and that, considering the important duties and responsibilities of the post, the pay attached to it should be not less than Rs. 1,000, rising to Rs. 1,350 by annual increments of Rs. 50, to be made up by contributions from Provincial, Municipal, and Local Funds.

You accordingly request sanction to the entertainment of a Sanitary Engineer on the above terms

2. In reply I am to say that the Government of India is aware that much attention is paid to the development of local self-government in the Madras Presidency, and that under the control of the District Officers many local bodies are beginning to evince an interest in the promotion of sanitary improvements. It is therefore far from being the wish of the Governor General in Council to interfere with the salutary operation of the existing system, or to introduce changes which are inopportune or inappropriate. But it has been decided, after mature deliberation by His Excellency in Council, and the decision has been approved by the Secretary of State, that the establishment of Provincial Sanitary Boards will materially promote the cause of sanitation. While it is thus incumbent on the Government of India to maintain

the principle of a Sanitary Board, as sketched in the Resolution quoted above, it is anxious to go as far as it can to meet the wishes of His Excellency the Governor in Council in this matter, and it therefore will not object to the Sanitary Board in Madras being so constituted as to consist of the Sanitary Commissioner to Government and the special Sanitary Engineer. Under the Madras system this Board would naturally work in concert with the Collector of any District for the purpose of planning or carrying out any particular sanitary work or works in his Collectorate, and thus the main features of the system, which has commended itself to the Secretary of State, will be practically secured. The Governor General in Council would wish that the Proceedings of the Board should be regularly recorded and submitted to the Local Government for such orders as may be necessary; but he will leave it to the Government of Madras to prescribe the precise lines on which it should work, and the manner in which the Sanitary Commissioner and Engineer shall be associated together.

A recommendation will now be made to Her Majesty's Secretary of State for sanction to the appointment of a Special Sanitary Engineer on a salary of Rs. 1,000, rising to Rs. 1,350 per mensem by annual increments of Rs. 50.

3. As regards the other points discussed in the Home Department Resolution of the 27th July 1888, I am to say that the Governor General in Council is glad to observe from the latest Municipal and District Boards' Reports that there is no fundamental difference of opinion between the Government of Madras and the Government of India; and His Excellency in Council trusts to the Local Government giving effect to the principles of the Resolution, with due regard to local circumstances.

4. In connection with this subject I am directed to enclose an extract from a Report made by another province in regard to the proceedings of Sanitary Commissioners. I am to say that, in the opinion of His Excellency in Council, the Commissioner ought certainly to see and confer with the District Officers whenever he makes an inspection; and to report to Government, not only shortcomings, but how far they have been, or are, in course of being rectified.

[No. 14.] From A. P. MacDonnell, Esq., C. S. I., Secretary to the Government of India, Home Department, to the Officiating Secretary to the Government of Bengal, Municipal Department,—No. 212, dated Simla, 5th July 1889.

I am directed to acknowledge the receipt of your letter No. 185, dated the 25th January last, submitting, for the consideration of the Governor General in Council, a copy of a Minute* recorded by His Honour the Lieutenant-Governor on the Resolution of the Government of India, No. $\frac{3}{212\text{-}225}$, dated the 27th July last, regarding measures to be adopted for the promotion of Sanitary reform in India.

*Dated the 17th January 1889.

2. In reply I am to communicate the following observations:—

First.—As regards the doubt expressed by His Honour the Lieutenant-Governor as to the powers of District Boards in the matter of local taxation, I am to recommend for the consideration of His Honour the advisability of having recourse to such legislation, as may be deemed necessary, to enable the Boards to raise the funds that may be required for Sanitary purposes.

Secondly.—As regards the powers of District Boards to borrow money through the instrumentality of the Local Government for the purposes of Sanitation, I am to say that this matter is under consideration, at present, and that as the rules now stand, District Boards can borrow money from Government for Sanitary improvements with the sanction of the Governor General in Council.

Thirdly.—As regards the establishment of a Provincial Sanitary Board, I am to say that it has been decided, after mature deliberation by the Governor General in Council, and the decision has been approved by the Secretary of State, that the establishment of Provincial Sanitary Boards acting in communication with local officers and, when necessary, associating them with themselves in their work, will materially promote the cause of Sanitation. But while the Government of India considers it essential to preserve the principle of a Sanitary Board, as sketched in the Resolution quoted above, it is anxious to go as far as it can to meet the wishes of His Honour, by allowing the Provincial Board in Bengal to consist of the Sanitary Commissioner to Government, a Sanitary Engineer who is an expert in Sanitary matters as Members, and the Junior Member of the Board of Revenue as the President. I am now to request, if His Honour the Lieutenant-Governor desires that the Engineer on this Board should be a whole-time officer, that a formal application may be submitted for sanction to his entertainment, on such pay as, approves itself to the Lieutenant-Governor, to be borne by Provincial, Local and Municipal funds.

From A. P. MACDONNELL Esq., C.S.I., Secretary to the Government of India, to the Chief Commissioner of the Central Provinces,—No. 213, dated Simla, the 5th July 1889. [No. 15.]

I am directed to acknowledge the receipt of your letter No. $\frac{275}{386}$, dated the 16th January last, submitting your views on the Resolution of the Government of India, No. $\frac{}{212\text{-}225}$, dated the 27th July last, regarding the measures to be adopted for the promotion of Sanitary reform in India.

2. In reply I am to say that the Governor General in Council agrees in your proposal to work out the scheme of Sanitary organization indicated in your letter under reply; but, at the same time, His Excellency in Council desires that the principle of a Provincial Sanitary Board, which has been approved by the Secretary of State, should be borne in mind and, as far as possible, adhered to by associating the Sanitary Commissioner with the Superintending Engineer as a Board for the purposes indicated in the Government of India's Resolution referred to above. The Divisional Commissioners and District Officers should be added to the Board, whenever necessary, for work connected with their particular jurisdictions. The Board would of course act under the orders of the Chief Commissioner.

From A. P. MACDONNELL, Esq., C.S.I., Secretary to the Government of India, to the Chief Commissioners of Assam, Burma, Coorg, and the Resident at Hyderabad,—Nos. 214—17, dated Simla, the 5th July 1889. [No. 16.]

I am directed to acknowledge the receipt of your letter, * and in reply to say that the Governor General in Council approves the action taken by you for giving effect to the views of the Government of India as indicated in Home Department Resolution No. $\frac{3}{212\text{-}225}$, dated the 27th July last, on the subject of the measures to be adopted for the promotion of sanitary reform in India.

*Assam, No. 7518, dated the 28th December 1888.
Burma, No. 795—31S., dated the 30th November 1888.
Coorg, No. 2121—1708, dated the 4th December 1888.
Hyderabad, No. 490G., dated the 23rd November 1888.

From the Government of India to the Right Honourable VISCOUNT CROSS, G. C. B., Her Majesty's Secretary of State for India,—No. 227, dated Simla, the 3rd August 1889. [No. 17.]

With reference to the Despatches marginally noted, we have the honour to forward a copy of a letter from the Government of Madras containing the views of that Government on the proposal made in the fifth paragraph of our Resolution of the 27th July 1888 that a Sanitary Board should be established in each province, and be entrusted with the control and supervision over sanitary works, whether undertaken in urban or rural areas. We also forward a copy of our reply to the Madras Government.

To Secretary of State, No. 11 (Sanitary), dated 11th August 1888.
From Secretary of State, No. 2, (Statistics and Commerce), dated 10th January 1889.

2. It will be seen that the Madras Government, while opposed to the creation of a Sanitary Board, accepts the proposal to appoint a special Sanitary Engineer, who should be an Officer with adequate experience of sanitary work both in Europe and the East, and whose duty it would be to act as adviser to Municipalities and Local Boards in all matters relating to sanitary engineering. His Excellency the Governor in Council considers that the appointment should be a special one; that the Officer should be attached to the Local and Municipal Department of the Chief Secretary's office, and unconnected with the ordinary Public Works Department; and that, in view of the important duties and responsibilities of the post, the pay attached to it should be not less than Rs. 1,000 rising to Rs. 1,350 by annual increments of Rs. 50, to be made up by contributions from Provincial, Municipal, and Local Funds.

3. For the reasons given in our Home Secretary's letter dated the 5th instant, we have informed the Madras Government that we shall make no objection to the Sanitary Board in Madras being so constituted as to consist of the Sanitary Commissioner to Government and the special Sanitary Engineer; and we now recommend that Your Lordship's sanction may be accorded to the appointment of a special Sanitary Engineer on the terms proposed by the Local Government.

From H. J. S. COTTON, Esq., Officiating Secretary to the Government of Bengal, to the Secretary to the Government of India, Home Department,—No. S. $\frac{28}{3}$ 6, dated Calcutta, the 29th July 1889. [No. 18]

I am directed to acknowledge the receipt of your letter No. 212, dated 5th July 1889, regarding measures to be adopted for the promotion of sanitary reforms in India.

2. In this letter the Government of India recommend, for the consideration of the Lieutenant-Governor, the advisability of having recourse to legislation, to enable District Boards to raise the funds which may be required for sanitary purposes. I am to say that the Lieutenant-Governor has had under his consideration for some time past proposals regarding local taxation

and the further development of the scheme of Local Self-Government in the direction of educational, sanitary, and other improvement, and that memoranda on the subject have been prepared and suggestions made which have been circulated for the opinion of selected Officers and others whose advice is likely to be useful. Until opinions have been received on these suggestions, the Lieutenant-Governor will not be in a position to submit any detailed scheme for giving effect to the proposal now made by the Government of India ; but, as at present advised, Sir Steuart Bayley is disposed to think that it will be inexpedient to impose a special cess exclusively for sanitation or any other purpose, and that the preferable course, if additional local taxation is found to be necessary, will be to raise a general local cess or rate, of which certain proportions would be appropriated for such general subjects of expenditure as are comtemplated by the Local Self-Government Act. Among such objects, sanitation is of primary importance. The question is a large one, and will undoubtedly excite much discussion and opposition, but the information at present in the possession of Government all points to the conclusion that the assets of the local authorities must be augmented from some source or other if the intentions of the framers of the Local Self-Government Act are to be effectually complied with, and that no other alternative is open than the imposition of additional taxation. The Lieutenant-Governor will adopt this alternative with the greatest reluctance, and desires to avoid committing himself to any definite expression of policy until the advice of all Officers who have been consulted has been fully considered. He would not wish to resort to any measure of taxation which will inevitably be most unpopular, until every available resource has been exhausted. It is not for sanitation only, but for all the general objects specified in the Act, such as pounds, primary schools, dispensaries, registration of vital statistics, sanitation, and the like, that more money is wanted. No material aid from Provincial Funds can, however, be expected. It is only in special directions that Provincial resources can afford assistance : the revenues of this Government are altogether too crippled to allow the Lieutenant-Governor to appropriate them for local purposes, and, under existing circumstances, Provincial Funds must be entirely absorbed in meeting the necessary expenditure in the ordinary departments of administration.

3. The Lieutenant-Governor, I am to say, accepts the proposal to appoint a Sanitary Board in Bengal, consisting of the Sanitary Commissioner to Government and a Sanitary Engineer as Members, with the Junior Member of the Board of Revenue as President. The Engineer on this Board should be a whole-time Officer. There are no Engineers at present on the Bengal establishment who have had special training or experience in sanitary matters, but there are Officers who would prove themselves to be thoroughly efficient, and who would soon qualify themselves to undertake the duties required of them. The pay of such an Officer should, in the Lieutenant-Governor's opinion, be six or seven hundred rupees a month in the first instance, and it would be necessary to grant him a local allowance of not less than a hundred rupees a month, in order to compensate him for the extra expense of living in Calcutta. He would receive promotion with Officers of his own standing in the Service. This Officer should work professionally under the most competent advice and control, and the Lieutenant-Governor will therefore arrange that the plans and estimates prepared by him should be submitted for the approval of the Chief Engineer to Government, in the Irrigation Department.

4. The Lieutenant-Governor is prepared, for the present at all events, to defray the cost of the salary and allowances of the whole-time Sanitary Engineer from Provincial Funds. It is desirable that the constitution of a Board should not be indefinitely delayed, and if his salary is to be paid for locally, it is impossible to say when funds would be available for the purpose.

5. The Lieutenant-Governor, I am to say, wishes that the Board may be appointed and commence operations from the beginning of next cold weather, and I am therefore to ask that early sanction to the appointment of a whole-time Engineer, as proposed, may be accorded.

[No. 19.] From C. J LYALL, Esq., C.I.E., Officiating Secretary to the Government of India, to the Secretary to the Government of Bengal, Municipal Department,—No. 323, dated Simla, the 11th October 1889.

With reference to paragraphs 3 to 5 of your letter No. S. 2S.—2-6, dated the 29th July last, in which the Lieutenant-Governor proposes the appointment of a whole-time Officer as Sanitary Engineer on the Sanitary Board, which it is intended to establish in Bengal, and suggests that the Officer selected should receive a pay of six or seven hundred rupees a month, with a local allowance of Rs. 100 to meet the cost of living in Calcutta, I am directed to enquire whether His Honour has any specially qualified Officer in view who could be appointed on the salary suggested.

2. I am to state, for His Honour's information, that the Government of Madras has considered it necessary to propose the appointment of a special Sanitary Engineer for that Presidency, who would be unconnected with the ordinary Public Works Department, and, in view of

the important duties and responsibilities of the post, to recommend a pay of Rs. 1,000 rising to Rs. 1,350 by annual increments of Rs. 50, the amount of his salary being made up by contributions from Provincial, Municipal, and Local Funds. This proposal has been forwarded by the Government of India for the sanction of the Secretary of State.

3. I am to add that His Excellency in Council considers that it would be perfectly fair to require local or municipal bodies in Bengal to make reasonable contributions towards the cost of the appointment of the Sanitary Engineer, calculated either on any special work actually performed for them, or according to the amount of their expenditure on works with which the Engineer might be connected.

4. Before addressing Her Majesty's Secretary of State on the proposal submitted by the Government of Bengal, I am to ask that it may be reconsidered by the Lieutenant-Governor in the light of these remarks.

From The Right Honourable Viscount CROSS, G.C.B., Her Majesty's Secretary of State for India, to His Excellency the Most Honourable the Governor General of India in Council,—No. 73 (Statistics), dated India Office, London, the 10th October 1889. [No. 20.]

I forward, for such consideration and use as may seem fitting to Your Excellency's Government, six copies of a pamphlet by Deputy Surgeon-General Hewlett, C.I.E., on "Village Sanitation in India."

2. I enclose a copy of Dr. Hewlett's letter forwarding the pamphlet, and of the reply which I caused to be sent to that Officer.

Note.—Pamphlet printed as Appendix G to these Selections.

From Deputy Surgeon General T. G. HEWLETT, C.I.E., late Sanitary Commissioner for the Government of Bombay, to Her Majesty's Under Secretary of State for India,—No. R. and S.—1462-89, dated Bedford, the 18th September 1889.

I have the honour to forward to you, for the favour of submission to the Right Honourable the Secretary of State for India, a pamphlet I have written on the subject of Village Sanitation in India, which embodies the measures which are, in my opinion, necessary for its successful introduction.

2. If I may venture to ask so great a favour, I would very respectfully solicit that the Secretary of State may be pleased to recommend this pamphlet for the consideration of the Government of India, as it contains the experience gained by a long sanitary service in that country, and has been written with an intimate knowledge of the people, their manners, customs, and sanitary requirements, so that I entertain strong hopes it may assist Local Governments in adopting measures, legislative or executive, to carry out the Resolution of the Government of India of July 1888.

3. In the event of the Secretary of State being graciously pleased to accede to my request, I shall have much pleasure in forwarding to you the number of copies which may be desired.

From the Assistant Under Secretary of State for India, to Deputy Surgeon-General T. C. HEWLETT, C. I. E., No. 1462 R. S. and C., dated India Office, London, S. W., the 3rd October 1889.

I am directed by the Secretary of State for India to acknowledge the receipt of your letter, dated the 18th September, forwarding a pamphlet on "Village Sanitation in India."

Viscount Cross has perused your pamphlet with interest, and directs me to say that he will be glad to have six more copies for transmission to the Government of India for their consideration.

I am directed to add that the Secretary of State, when sending the pamphlet to India, will be obliged to inform the Government that he does not accept, as correct, the statement on the last page, that "a terrible mortality is now permitted year after year to take place (in India) without any measures being taken by Government to prevent it."

From C. L. TUPPER, Esq., Secretary to the Government of the Punjab, to the Secretary to the Government of India,—No. 462, dated Lahore, the 13th August 1889. [No. 21.]

I am directed by the Lieutenant-Governor to acknowledge the receipt of your letter No. 232, dated the 20th July 1889, requesting that the submission of the reply of this Government to Home Department Resolution No. 3—212-25, dated the 27th July 1888, on the subject of the sanitary improvements of towns and villages in India, may be expedited.

2. In reply I am desired to submit, for the information of the Government of India, a copy of a Note recorded by His Honour the Lieutenant-Governor on the Resolution of the Government

of India, and also a copy of a Resolution published by the Punjab Government, No. 303, dated 6th June 1889, appointing a Committee to consider the proposals made by the Government of India to establish a Provincial Sanitary Board.

3. I am to add that the Committee will not probably meet till September, as the opinion of the Government Advocate, who has been consulted on certain points, is awaited, and Mr. Mackworth Young who, as will be seen from the above Resolution, has been appointed President of the Committee, is about to leave Simla for some weeks.

Note by His Honour the Lieutenant-Governor of the Punjab on the Resolution of the Government of India in the Home (Sanitary Department), No. 3—217, dated the 27th of July 1888.

With reference to paragraphs 1 and 2 of the Resolution, I venture to think that, so far as the Punjab is concerned, the views there expressed exaggerate, even as regards the towns, the rapidity of the advance of popular education and its effects in facilitating sanitary reforms. As regards the villages, the condition of the question is not really materially changed. Though it is true to some extent, even in rural areas, that the motives of new measures taken are not so liable to be grotesquely and mischievously misconstrued from mere ignorance as formerly, yet, on the other hand, our system has lost some of the popularity which it had in the early days of our administration of the Punjab. There is plenty of latent or open discontent in the country, and it is as unwise as ever to give new grounds for it. The villagers form the mass of the population in the Punjab, and the Army and Police are largely recruited from it. We cannot lightly afford to risk losing any of the popularity which we have, in order to benefit the people against their will. It will be almost as difficult as ever to persuade the mass of the peasantry of the fairness of coercion, or of the wisdom of our measures, nor do I believe that the peasantry will be wrong in their scepticism, unless we are exceedingly cautious and tentative in our proceedings, and listen carefully to their individual objections, and adapt our orders in each case to meet them. On this subject of village sanitation and coercion, as opposed to persuasion, the views of my predecessor, Sir C. U. Aitchison, are given in paragraphs 6 and 7 of Punjab Government Resolution in the Home (Medical and Sanitary) Department, No. 434, of the 20th June 1883, and of his predecessor, Sir Robert Egerton, in paragraphs 3 to 8 of this Government No. 1975, of the 19th May 1879, to the Government of India, Home Department. That the difficulties and dangers of a coercive policy have not, in the opinion of good judges, since disappeared, may be inferred from the correspondence marginally noted showing the action taken upon Government of India, Home Department letter No. 275, dated the 24th September 1887. I allude particularly to paragraphs 3 to 5 of the letter from the Inspector General of Civil Hospitals, Punjab, No. 4080, dated the 12th of December 1887, addressed to this Government, and to paragraph 2 of the Report, dated 10th April 1888, of the Committee appointed to consider the question of village sanitation.

Punjab Government, No. 576, dated 4th November 1887.
From Inspector General of Civil Hospitals, No. 4080, dated the 12th December 1887.
To Inspector General of Civil Hospitals, No. 47, dated the 26th January 1888.
From Inspector General of Civil Hospitals, No. 1126, dated the 18th April 1888, and enclosure.

2. As to the general point of view from which village sanitation must be regarded, I am still of the opinion expressed in paragraph 16 of Punjab Government Proceedings in the Home (Medical and Sanitary) Department, No. 476, dated the 15th October 1888, that if we attempt any coercion, it must be of the mildest kind, and must at present be restricted, so far as village habitations are concerned, to a few points involving small change of practice and little or no expense, and in regard to which we may hope to be able to carry the majority of the communities with us. There is, however, one point in regard to which we shall have the people concerned with us in all that can be done, and as to which there is no need for caution, *viz.*, the drainage of water-logged areas. This, however, only affects certain tracts, and is often exceedingly difficult or even impossible to cure. But there is room for immense improvement in this direction. In fact, I believe that much more can be done to benefit the public health, by this one measure, than by any other sanitary works which can be undertaken. The attention of Local Bodies will continue to be drawn to this subject in every possible way, and they will be helped by grants-in-aid to the utmost that Provincial finances can afford. Orders under Section 20 *d* (2) will be issued, placing this matter, with certain exceptions, under the control of the District Boards.

3. After these preliminary remarks we come to the question of executive agencies and funds. As regards funds, we may send the Government of India a copy of Punjab Government Resolution in the Committees Department, No. 178, dated 13th March 1889, and remark that the difficulty in respect to Municipalities is that the Committees and the people they

represent are generally obstinately averse to any taxation except octroi, and the income from that tax must tend to decline under the repressive action which Government takes in respect to it; nor, considering the very small extent to which the inhabitants of these Municipalities contribute to Imperial or Local taxes, do they seem to have a fair claim to grants-in-aid, except in a few cases where the health of troops is concerned, or other considerations arise directly affecting the interest of the Supreme Government, as in the case of the Murree water-supply, or the Simla sewerage system.

4. As to funds for village sanitation, it may be said that the amount which the District Funds can afford to spend annually on village sanitation will be small, and that each village will have to find, separately, the cost of any new measures for improving the supply or preventing the pollution of its drinking water, or for the conservancy of the village site. Only in a few very exceptional cases could the District Fund be properly asked to give grants-in-aid for such purposes. At the same time the people in the villages are generally poor, and any new taxation for these purposes would be felt and would be very unpopular. In the Punjab the whole weight of any new taxation would fall on the actual villagers; in other parts of the Bengal Presidency, where the villagers are generally rent-paying tenants of landlords who live elsewhere, the case may be different. For drainage schemes which generally benefit several villages, and, more or less, large tracts of country, grants or grants-in-aid should of course be freely given from District Funds, and loans should be taken by District or Local Boards if necessary.

5. With reference to the policy of encouraging Local bodies of all kinds to take loans for sanitary purposes, we may draw attention to Punjab Government Circular in the Committees Department, No. 4—160, dated the 17th of March 1888, addressed to all Commissioners.

6. Coming to the question of executive agency, it presents, as the Government of India Resolution points out, few difficulties in the case of urban areas. These towns are natural units of administration, and the interests of the population of each town and of the members who represent it in its Municipal Committee are fairly identical. These places also have, generally, stipendiary Magistrates or Boards of Honorary Magistrates resident in the place, and they are accessible to the Sanitary Commissioner, the local Medical and Engineer Officers and other authorities. On the other hand, in rural areas the question is entirely different, and I venture to dispute the view taken in the fourth paragraph of the Government of India Resolution, that the Punjab District Boards Act has given the Local Government the means of creating a suitable agency for executing sanitary reforms in villages. No doubt the Act would allow of the Government appointing a Local Board for a village union or group of villages; but, though the very different land-tenures and constitution of the village population may make this a practical way of getting an executive agency in Madras, it is not practicable in the Punjab. Here, in this country of sturdy co-parcenary communities of peasant proprietors, each village must, in village affairs, govern itself, or else be governed by orders issued by some high central authority. I think that no one who knows these villages will doubt the fact. Even when neighbouring villages are not at feud, and not specially jealous of each other (as they usually are), the nature of things, as well as the nature of the men, is fatal to any village union scheme which would work. Practically therefore we cannot have Local Boards under the Act for village unions; nor would such Boards, if appointed, constitute efficient executive agencies for village sanitation. Nor could we create under the District Boards Act, or by new legislation, a village agency which would work effectually for sanitary reform. In the present state of village opinion on the subject it would require not only village Boards and rules, but village Magistrates to enforce the rules by penalties. There are few men in the villages fit to be entrusted with the power, and the villagers are too democratic in their ideas and too revengeful to submit. Besides, in most villages, the whole population, headmen included, would be against the whole system. It seems clear therefore that we are practically in the same position as the North-Western and Central Provinces in the matter of the unit of local self-government under the Act. That is to say, our smallest unit is the Tahsil Local Board. It is said in the Government of India Resolution that there is no reason why Boards for such areas as tahsils should not be effective executive agencies for village sanitation. For some purposes, such as drainage of water-logged tracts, they may do good work, but they are not, I think, suitable agencies for village sanitation properly so called, and it would be hardly true to class any work which they can be got to effect in this direction as local self-government. In fact, if we press our District and Local Boards to act strongly in this direction, we run the risk of discrediting their character as local self-government agencies. The same remark is true of the Municipal Committees, but to a less extent.

7. The village sanitation rules, which we have had hitherto, have been suggestions rather than rules, as they are not based on any enactment. The Resolution of the Government of India recognizes in paragraph 6 that legal power is required to enforce sanitary measures, and that rules to be effectual must be supported by penalties. It is doubtful whether, under the present law, District or Local Boards could be given power to construct or improve sanitary works, such as wells, tanks, drains or sewers, in a village without the consent of the land-holders. It would perhaps be safe to allow the Boards to have power to order villages to improve drinking wells or tanks, or clear them out, or to construct or repair drains, and power also to do the work and recover cost from the village in case of failure. The question whether Sections 56 and 20, clauses (*r*) and (*h*) of the Act give the power to make regulations, which would legalize action of this kind, has been referred to the Government Advocate for opinion. No doubt in the absence of any legal power if the Boards found the money, or a large part of the money, the consent of the landholders would generally be obtainable for the construction or improvement of wells or tanks when the existing ones are insufficient or in really bad condition; but, as already stated, the cases in which the Boards could contribute for such works would be very exceptional. Under sections 30 to 33 of the Act, the District Boards could apparently impose fresh taxes to meet the cost of such works, but such taxes would probably have to be general over the area under the Board, and it is exceedingly doubtful whether a majority of the members of these Boards would ever agree to vote such taxes, and the taxation would be exceedingly unpopular in the villages generally. Any proposal for additional taxation to meet the cost of conservancy establishments in villages would be still more unpopular and unlikely to be voted. I consider that it is not expedient that new taxes should be imposed for such purposes, and that if the money could be so raised, the District Boards would not be a suitable agency for carrying out in villages generally a system of repair or construction of such works. As to penal rules against the pollution of water in wells and tanks, it would apparently be possible under section 56 and section 20 clause (*e*), for District Boards to make regulations applicable to villages in this direction. Whether conservancy rules against the non-removal of filth from houses or its improper deposit could be made under section 56 and section 20, clause (*p*), seems doubtful. The question has been referred to the Government Advocate, and if no legal difficulty is apparent, the plan of attempting to induce the Boards to frame such regulations will be considered, but they will have to be of a mildly coercive character and tolerant of the commonest and lesser forms of nuisances to be found in villages. Even when such rules are passed, it will be a slow and difficult business to enforce them. The existing magisterial agency will have to be relied on, and would be much overburdened if prosecutions were numerous. It has been suggested that the Boards would have to appoint Sanitary Inspectors to detect and prosecute. I am not disposed to accept this suggestion at present, as the measure would be very unpopular and open to much abuse in this country, and the Inspector would have a hard task to prove his cases.

8. With reference to these difficulties which are apparent on the surface, it has been suggested by some experienced Officers that to make a real and speedy advance in village sanitation, it will be necessary to separate the matter from the field of local self-government, and to legislate so as to give the Magistrate of the district and his Assistants power to fine villages *en bloc* for insanitation, and to impose punitive sanitary establishments upon villages which do not improve their sanitation after warning. I would be very sorry to propose legislation of this kind, and I do not believe that the matter is urgent enough to make it really necessary. After all, in spite of much less attention to sanitation, the villages are still much more healthy in the Punjab than the towns. The greater general robustness of the people is very remarkable, and the true and general complaint of the Punjab villagers is that they are increasing in numbers so fast that their holdings are becoming insufficient for their subsistence. If the poorer villagers are sometimes weakly, it is to be feared that a deficiency of good food and clothing is the cause, rather than other insanitary causes.

9. The only exception is in the case of villages in certain malarious, low, alluvial or canal-irrigated tracts, where the sub-soil is saturated with water. Here the villagers are often much less robust than the townspeople. Twenty-five years ago I was engaged in the land-revenue settlement of a sub-montane district of the Punjab, and had to draw up pedigree tables of the land-holding families. In one low alluvial tract long densely irrigated by small private canals, the physique of the proprietors was extremely weakly, and the pedigree tables showed that for generations they had been diminishing rather than increasing in numbers. On the other hand, in adjacent upland unirrigated tracts the people were very robust, and the pedigree tables showed large families and rapid increase in numbers, in spite of cattle herded in the dwelling houses, manure heaps close to the houses, absence of latrines, want of precautions to

protect drinking water, and other usual village customs which are held to be insanitary. Though the drinking water in the upland villages is constantly not what we should call pure, and is often full of salts of kinds, it does not seem to affect the health of the people. and in their own way they know what water suits them, and take some pains about it. In the same way they are so accustomed to the vicinity of their manure heaps that they seem to be unaffected by them. At all events, before proposing coercive legislation of this nature in the Punjab, I should wish to watch how it succeeds in other older and more advanced provinces.

10. As to the appointment of a Sanitary Board for the Province, a Committee has been convened to consider the question of appointing a Provincial Board, and the rules required under the Act in connection with it. But I am not confident that such a Board will do the work better than it is done under the present system.

11. It is already the practice in the Punjab that all large schemes for water-supply and sewer-drainage of Municipalities are carefully considered by the Sanitary Commissioner and by the Public Works Department, and the scheme generally carried out or supervised by Public Works Department Officers lent for the purpose. So, also, schemes for drainage of water-logged tracts are taken up and carried out by Government in canal-irrigated tracts, and where they have been taken up in a few cases by District Boards, the Officers of the Irrigation Department have been asked to advise and help. The Board for the Punjab should, I think, consist of the Sanitary Commissioner, the two Chief Engineers, General and Irrigation Branches, and the Commissioner of Lahore; but I would allow the Chief Engineers and the Commissioner of Lahore to select and appoint one of their subordinates, not below the rank of Deputy Commissioner or Executive Engineer, to act for them when not able to attend themselves. I agree that all Commissioners of Divisions should be *ex-officio* Members of the Board in questions specially connected with their own Divisions; but in the same way I would allow them to appoint one of their Deputy Commissioners to act for them when they cannot attend, or when the question relates to a particular district and the Deputy Commissioner is the best Officer to handle it. In the Punjab there should be no non-official Members appointed by the Local Government: we have not got the men at present. But in dealing with special local questions the Commissioner should be allowed to appoint a Member of the Municipal Committee or District Board concerned to to be an additional Member *pro tem.* The Government of India says the Board is to be not merely consultative, but the executive agency through which Government is to act in the Sanitary Department. What is meant by this is not explained. In dealing with particular schemes of water-supply, conservancy or drainage, I agree that, subject to Government control and such rules as exist or may be necessary as to sanction of Government on the financial side, the Committee may have executive powers for pressing Local bodies to undertake works, and approving, modifying, or disapproving schemes submitted; but as to general measures and rural sanitation, other than large drainage schemes, I am strongly of opinion that the Board's functions should be consultative only. For village sanitation the sole executive agency should be Commissioners, Deputy Commissioners and District and Local Boards.

12. The Government of India Resolution says it is desirable that the Provincial Board should be in constant direct communication with the Sanitary Commissioner with the Government of India. This is a question in which I will not ask the Committee to advise, though I propose to notice it myself when replying to the Government of India.

13. As to paragraph 6 of the Government of India Resolution, we have made a beginning in the direction of sanitary survey by the orders in our Review of Sanitary Administration for the year 1887. It will be for the new Board, if appointed, to carry on a survey on those lines, and to propose such improvements or extensions of the system as they may think necessary.

J. B. LYALL,
Lieutenant-Governor.

The 5th May 1889.

Proceedings of the Honourable the Lieutenant-Governor in the Home (Medical and Sanitary) Department, No. 303, dated 6th June 1889.

Read—

Letter from the Government of India, Home Department, No. 275, dated the 24th September 1887, paragraph 10.

Endorsement No. 572½, dated 4th November 1887, forwarding the above letter to all Commissioners for opinion.

Letter No. 576, dated 4th November 1887, requesting the Inspector General of Civil Hospitals and the Sanitary Commissioner of the Punjab to submit proposals for carrying out the wishes of the Government of India, in view to the improvement of village conservancy and sanitation.

Replies of all Commissioners and Deputy Commissioners to Circular endorsement No. 572½, dated 4th November 1887.

Letter of Inspector General of Civil Hospitals, No. 4080, dated 12th December 1887, and Punjab Government No. 47, dated 26th January 1888, replying to the above.

Letter of the Inspector General of Civil Hospitals, No. 1126, dated 10th April 1888, with Report of the Committee on Village Conservancy and Sanitation therein referred to.

Resolution of the Government of India in the Home Department, No. 3—212-225, dated 27th July 1888.

Despatch of the Secretary of State, No. 2, dated 10th January 1889, and enclosure.

Punjab Government letter No. 1975, dated 19th May 1879, to the Government of India, Home Department.

Proceedings of the Punjab Government in the Home (Medical and Sanitary) Department, No. 434, dated 20th June 1883.

Proceedings of the Punjab Government in the Home (Medical and Sanitary) Department, No 476, dated 15th October 1888.

Government of India, Home Department, letter No. 365, dated 4th December 1888.

Proceedings of the Punjab Government in the Boards and Committees Department, No. 178, dated 18th March 1889.

Note by His Honour the Lieutenant-Governor of the Punjab, dated 5th May 1889.

RESOLUTION.—The Lieutenant-Governor is pleased to appoint a Committee to consider and advise on the proposal made by the Government of India in the Home Department to establish a Provincial Sanitary Board.

2. The Committee will consist of the following Officers :—

Mr. W. Mackworth Young, 2nd Financial Commissioner.
Colonel LeMesurier, Secretary to Government, Punjab, Public Works Department.
Mr. C. L. Tupper, Secretary to Government, Punjab.
Lieutenant-Colonel F. Home, Joint Secretary to Government, Punjab, Public Works Department, Irrigation Branch.
Brigade-Surgeon R. Gray, Officiating Inspector General of Civil Hospitals.
Mr. W. Coldstream, Deputy Commissioner, Simla.
Dr. A. Stephen, Sanitary Commissioner, Punjab.
Mr. H. C. Fanshawe, Junior Secretary to Government, Punjab.

Mr. W. Mackworth Young will be President of the Committee and Dr. A. Stephen, Secretary.

3. The Committee will meet at Simla on a date to be fixed hereafter, when the Government Advocate has furnished his opinion on certain legal points arising in the correspondence read above, which have been referred to him.

4. The matters for the consideration of the Committee are—

(1) whether a Sanitary Board should be appointed for the Punjab and, if so, in what way ; and

(2) in connection with such a Board, if established, what alterations in, or additions to the Rules under the District Boards Act and the Punjab Municipal Act are necessary.

5. In coming to conclusions upon these matters, the Committee should take into consideration the suggestions made in the Note by the Lieutenant-Governor, dated 5th instant.

[No. 22.] From T. D. MACKENZIE, Esq., Acting Chief Secretary to the Government of Bombay, General Department, to the Secretary to the Government of India, Home Department,—No. 5232, dated Bombay Castle, the 18th December 1889.

I am directed to submit the following remarks, with reference to the Resolution of the Government of India, No. 3—212-225, dated 27th July 1888.

2. Having regard to the reports received by this Government from its Officers in the Land-Revenue, Medical, and Sanitation Departments with reference to the Resolution of the Government of India, and also in connection with the Village Sanitation Bill* which was recently read for the third time and passed in the local Legislative Council, the Governor in Council is inclined to the opinion that much exaggeration exists in the commonly received accounts of the amount of disease caused by what are usually called insanitary habits and arrangements. Fevers, dysentery, and diarrhœa arise, most frequently, from carelessness as to damp and chills. The influence of bad odours is greatly qualified in villages and small towns by abundant ventilation, There is no doubt great room for improvement in sanitary conditions amenable to legal regulations, but the state of things is not so outrageously and alarmingly bad as it is frequently represented to be. The history of vaccination shows that, by pains and patience and regulated energy, the people of the various Presidencies can be induced gradually to accept very great and radical changes, and to co-operate fairly well with the sanitary authorities. Government can afford to proceed step by step, and should do so in order that the people may go with it.

**Vide* Appendix A.

3. I am to say that the action hitherto taken by the Government of Bombay has been in entire accord with the principles enunciated by the Government of India in their Resolution, and there is therefore very little occasion for remark by this Government on the lines sketched therein for the progress of sanitary reform. The legislation and all the legislation which this Presidency is at present prepared for on sanitation, is embodied in the Bill above referred to. The existing law in Bombay Act VII of 1867 affords means by which, if they are vigorously and rigorously applied, the inhabitants of villages may be compelled to abandon many traditional habits which science has now pronounced insalubrious. Failing other resources, these means would be brought to bear in a more systematic way, and the existing machinery of administration could be employed on the work. But the system has some manifest defects. It lacks a constructive element. Its sanctions are too distant in application, too harsh and too uncertain for the purpose in view. A more complete and milder system can be gradually introduced under the Village Sanitation Act, and, when that is passed, the principal use of energy in giving effect to Bombay Act VII of 1867 will be to induce villages readily and cheerfully to accept the simpler form of the new Act. The reports this Government has received render it clear that any more ambitious attempt at legislation would, in the present state of education, meet with strenuous and bitter opposition, and that the enforcement of it would be attended with great and perhaps insurmountable difficulties. Progress in such a direction must necessarily be slow. The changes must be brought about little by little, and the people must, by degrees, become accustomed and reconciled to them. Even now it is undoubtedly the fact in this Presidency that improved ideas of cleanliness are gradually spreading, and that everywhere some slow, but still some perceptible, improvement, especially in the matter of water-supply, is being effected in the sanitary condition of all municipalities, of non-municipal towns, and even of rural villages.

4. The only point I am directed to say as to which this Government feels itself unable to acquiesce in the views of the Government of India, is as to the necessity, or even the desirability, of establishing an executive Sanitary Board. A Sanitary Board has already been tried in Bombay, and been shown by experience to be cumbrous, expensive, and inefficient, and so it probably would again be found to be if revived. India is not yet ready to profit by such elaborate machinery. A single Sanitary Commissioner, with Assistants, can for some years to come best perform and supervise the work which has to be done with the assistance which the Civil Surgeons and the Officers of the Army and Indian Medical Services can and should render. Much valuable aid could be furnished, notably by the Civil Surgeons, whose present duties cannot be regarded as too onerous, in originating, supplementing, and superintending the working of sanitary measures in the larger towns and the neighbouring villages. It appears to His Excellency in Council that a considerable amount of additional power might be directed on the sanitary problems of each district which is at present not utilized, for reasons which ought not to carry much weight.

5. The time may hereafter arrive when it will be desirable to have a Board corresponding to the Local Government Board in England, to co-ordinate and economize the working of the different factors in Local Government, and sanitation would necessarily be placed under the tutelage of such a Board. But the suggestion regarding the appointment of a central Sanitary Board is one in which the Governor in Council finds himself at present entirely unable to concur. The existing machinery, supplemented and improved in the manner indicated in the preceding paragraph, should suffice to meet all present requirements.

6. It may be possible in the near future to induce local bodies to jointly entertain a Sanitary Officer paid for proportionally by the municipalities and other local bodies of a district or sub-division. Such an Officer would be a useful adjunct to their *personnel*, and the expense need not be very great. His relations to the Sanitary Department, and his mediation between the several local bodies with which he might be connected, would be regulated by orders of Government, as contemplated in the Village Sanitation Bill, which also provides for the formation of village committees and for simple rules which these committees would have to enforce, and contemplates the raising of funds by voluntary contribution, the grant of aid from the Local Funds, the doing of village work by village labour, and the imposition in some cases of very light village taxation for purely village purposes. Further than this, in the way of immediate advance and experiment, this Government does not consider itself to be at present warranted in going.

From the Right Honourable Viscount CROSS, G.C.B., Her Majesty's Secretary of State for India, to His Excellency the Most Honourable the GOVERNOR GENERAL of India in Council,—No. 91 (Statistics), dated India Office, London, the 19th December 1889. [No. 23.]

In paragraph 2 of my Despatch No. 2, dated 10th January 1889, I expressed my approval of the orders issued by Your Excellency's predecessor for the establishment of Sanitary Boards for the control, initiation, and direction of sanitary measures in each province.

2. Your letter No. 227, dated 3rd August 1889, informed me that the Madras Government desired to establish for their province a special Sanitary Board, somewhat different in constitution from the body sketched in the Government of India Orders of July 1888. From Proceedings that have come before me, I have learnt that in the North-West Provinces and Oudh a Sanitary Board has been organized and is already at work; also that a Board has been established in Burma. But I have not received intimation that a Sanitary Board has been established in any other Province.

3. I shall be glad to receive an early report of the action taken and the orders issued by each Local Government under the important sanitary orders issued by the Government of India on the 27th July 1888.

[No. 24.] From A. P. MACDONNELL, Esq., C.S.I., Secretary to the Government of India, Home Department, to the Chief Secretary to the Government of Bombay,—No. 17, dated Calcutta, the 23rd January 1890.

I am directed to acknowledge the receipt of your letter No. 5232, dated the 18th ultimo, communicating the views of the Government of Bombay, with reference to Home Department Resolution No. 3—212-225, dated the 27th July 1888, on the subject of the measures to be adopted for the promotion of sanitary reform in India.

It is stated that the action hitherto taken by the Bombay Government has been in entire accord with the principles enunciated in the Resolution referred to, but that the Governor in Council is unable to acquiesce in the views of the Government of India as to the necessity, or even the desirability, of establishing an Executive Sanitary Board.

2. In reply I am to say that the Governor General in Council acknowledges the great attention which his Excellency the Governor in Council has given to the question of sanitation of towns and villages in the Bombay Presidency, and in ordinary circumstances would not be disposed to press him to reconsider his decision not to appoint a Sanitary Board at the present time. But the decision of the Governor General in Council that the establishment of Provincial Sanitary Boards would materially promote the cause of sanitation, was arrived at after mature deliberation, and the correctness of the decision borrows confirmation even from your letter under reply, in which the Governor in Council admits that the present system "lacks a constructive element," that a special Sanitary Engineer would be a "useful adjunct" to Local Boards and Municipalities, and that the services of such an Officer may be made available under the new Village Sanitation Bill*. Moreover the principle of a Sanitary Board has been approved † and sanctioned by the Secretary of State; and in a recent Despatch ‡ His Lordship remarked—"I anticipate that these Provincial Sanitary Boards, if carefully organized and judiciously worked, would exercise a powerful initiative and a valuable control in all Departments of sanitary work." In a still more recent Despatch, ‖ copy of which is now forwarded for the information of the Governor in Council, the Secretary of State desires to be informed of the action taken by Local Governments in giving effect to the principles that a Board should be established for the control, initiation, and direction of sanitary measures in each Province. In these circumstances, the Governor General in Council finds himself unable to accept the decision of the Government of Bombay upon this important matter, and is constrained to ask that it may be reconsidered.

* *Vide* Appendix A.

† *Vide* Despatch from Secretary of State, No. 2, dated 10th January 1889, communicated to the Government of Bombay under Home Department endorsement No. 1-34, dated 16th February 1889.

‡ No. 59, dated 22nd August 1889, communicated to the Government of Bombay by Home Department letter No. 366, dated 5th December 1889.

‖ No. 91, dated 19th December 1889.

3. In paragraph 2 of the enclosed Despatch allusion is made by His Lordship to the special Sanitary Board, constituted in the Madras Presidency upon somewhat different lines from those sketched in the Resolution of July 1888. In explanation of this reference I am to inform you that the Madras Government raised somewhat similar objections to those urged by the Government of Bombay to the creation of a Provincial Sanitary Board, but eventually agreed to establish a Board in a modified form consisting of the Sanitary Commissioner to Government and a special Sanitary Engineer. The special Sanitary Engineer is to be an Officer with adequate experience of sanitary work both in Europe and the East, whose duty it will be to act as adviser to Municipalities and Local Boards in all matters relating to Sanitary Engineering. The appointment will be a special one, and the incumbent will be attached to the Local and Municipal Department of the Secretariat Office, and unconnected with the ordinary Public Works Department. In view of the important duties and responsibilities of the post, he will draw a pay of Rs. 1,000 rising to Rs. 1,350 by annual increments of Rs. 50, to be made up by contributions from Provincial, Municipal, and Local Funds. It was considered desirable that part of the cost should be borne by Provincial Funds by way of a grant-in-aid to Local

bodies, but the greater part will probably be recovered from those Local and Municipal bodies, for whom the Sanitary Engineer may do any work of importance. The appointment of special Sanitary Engineer for Madras has received His Lordship's sanction, on the express understanding that the principle of a Provincial Sanitary Board has been maintained.

4. In now asking that the matter may be reconsidered by His Excellency the Governor in Council, in view to the necessity of meeting the wishes of the Government of India and the Secretary of State, I am to say that, while still preferring that the Sanitary Board for the Presidency of Bombay should be constituted in the manner set forth in the Resolution of 1888, the Government of India would not object to a scheme similar to that which has been adopted in Madras, or the establishment of a Board in such other form as the Governor in Council may deem sufficient to meet the requirements of the case.

5. I am to ask for an early reply to this letter.

From the Government of India, to the Right Honourable Viscount CROSS, G. C. B., Her Majesty's Secretary of State for India,—No. 2, dated Calcutta, the 25th February 1890. [No. 25]

We have the honour to acknowledge the receipt of Your Lordship's Despatch No. 91 (Statistics), dated the 19th December 1889, requesting to be furnished with a report of the action taken, and the orders issued, by each Local Government on our Resolution of the 27th July 1888, relative to the measures to be adopted for the promotion of sanitary reform in India.

2. The correspondence forwarded with our Despatches, marginally noted, will have informed Your Lordship of the steps which have been taken by the Governments of Madras and Bengal to give effect to our orders of July 1888. We now forward copies of the papers entered in the enclosed list, in order to show the action taken by the other Governments and Administrations.

To Secretary of State, No. 227 (Financial), dated 3rd August 1889.
To Secretary of State, No. 6 (Financial), dated 7th January 1890.

3. It will be seen that the action hitherto taken in the Bombay Presidency has been in accord with the principles enunciated in the Resolution of July 1888, though the Governor in Council has expressed his inability to acquiesce in our views as to the necessity, or even the desirability, of establishing an Executive Sanitary Board. We have, however, for the reasons given in our Home Secretary's letter of the 23rd January 1890, asked the Bombay Government to reconsider this decision, and at the same time intimated that, while still preferring that the Sanitary Board for the Bombay Presidency should be constituted in the manner indicated in our Resolution of July 1888, we should not object to a scheme similar to that which has been adopted in Madras, or the establishment of a Board in such other form as the Local Government may deem sufficient to meet the requirements of the case. The result of this reference will be reported to Your Lordship in due course.

4. In the North-Western Provinces and Oudh the Lieutenant-Governor and Chief Commissioner has, as a preliminary measure, appointed a Board to prepare a working scheme of operations, and to indicate the machinery through which it could be administered. In the Punjab a Committee has been appointed by the Lieutenant-Governor to consider our proposals for the establishment of a Sanitary Board, but the Sanitary Board has not as yet been appointed.

5. In the Central Provinces the position of the local Sanitary Commissioner has been strengthened. He has hitherto been in the habit of making suggestions only to local officers and local bodies, but he has now been directed to assume the position of the head of an Executive Department. In the course of his tours he will see and confer with the district officers and local bodies, reporting the result to the Chief Commissioner. The Superintending Engineer of the Province will be at hand for reference in all matters requiring engineering skill or advice, and through him the services of the Executive Engineers and other Officers of the Public Works Department will be made available for the consideration of local schemes. As this form of organization appeared to the Chief Commissioner most suited to the requirements of a small Administration like the Central Provinces, we have approved it, but, in doing so, we have informed the Chief Commissioner that the principle of a Provincial Sanitary Board should be borne in mind, and, as far as possible, adhered to by associating the Sanitary Commissioner with the Superintending Engineer as a Board for the purposes indicated in our Resolution of July 1888.

6. In Burma a Sanitary Board has been established, and a proposal made by the Chief Commissioner for the appointment of a Special Engineer to carry out the survey of the larger municipalities is now under our consideration. The establishment of Sanitary Boards in Assam and Coorg has also been sanctioned. The Resident at Hyderabad has not considered it necessary to form a Provincial Sanitary Board for a small Province like Berar, but he has issued instructions for the creation of a Sanitary Board for each district, with subordinate local boards for each village, not being a municipality.

7. We desire to take this opportunity of stating, with reference to the 2nd paragraph of Your Lordship's Despatch marginally noted, that, as the several Sanitary Boards must be allowed time to begin practical work, we have requested Local Governments and Administrations to cause a succinct Report of the working of the Boards up to the end of the calendar year 1890 to be submitted as an Appendix to the Sanitary Reports for 1890. We have also directed them to issue instructions for the regular submission, in a similar manner, of Annual Reports for the subsequent years.

No. 59 (Statistics and Commerce), dated 22nd August 1889.

[No. 26.] From the Right Honourable Viscount CROSS, G.C.B., Her Majesty's Secretary of State for India, to His Excellency the Most Honourable the Governor General of India in Council,—No. 2 (Public—Records), dated India Office, London, the 22nd January 1891.

With reference to Your Excellency's Sanitary letter* No. 16, dated the 9th September 1890, I forward herewith, for Your Lordship's information, a copy of the Agreement entered into with the Executors of the late Dr. Hewlett, who have accepted the offer of your Government of £50 for the copyright of his pamphlet on "Village Sanitation in India."

*Not reprinted.

AGREEMENT.

THIS INDENTURE made the thirteenth day of November one thousand eight hundred and ninety between WILLIAM OXENHAM HEWLETT of Number 2 Raymond Buildings Grays Inn in the county of London Solicitor and CYRIL HUGH PENNYCUICK DUCAT of Hazelby Newbury in the County of Hants Major General in Her Majesty's Army retired [Executors of Deputy Surgeon General Thomas Gillham Hewlett C. I. E. late Sanitary Commissioner for the Government of Bombay deceased] of the one part and the SECRETARY OF STATE FOR INDIA IN COUNCIL [hereinafter referred to as "the Secretary of State"] of the other part WITNESSETH that in consideration of the sum of FIFTY POUNDS on or before the execution of these presents paid to the said William Oxenham Hewlett and Cyril Hugh Pennycuick Ducat by the Secretary of State [the receipt whereof the said William Oxenham Hewlett and Cyril Hugh Pennycuick Ducat hereby respectively acknowledge] THEY the said William Oxenham Hewlett and Cyril Hugh Pennycuick Ducat as Executors hereby assign unto the Secretary of State ALL THAT pamphlet or work written by the said Thomas Gillham Hewlett deceased and first published at Bedford by Messieurs F. Thompson and Son on the twelfth day of September one thousand eight hundred and eighty nine entitled "Village Sanitation in India" and the copyright thereof and also all copies of the said pamphlet and all manuscripts and notes used in the compilation thereof which are respectively in the possession or under the control of the said William Oxenham Hewlett and Cyril Hugh Pennycuick Ducat respectively and all the estate and interest of the said William Oxenham Hewlett and Cyril Hugh Pennycuick Ducat respectively in the said pamphlet and premises AND ALSO all the powers and authorities profits emoluments and advantages whatsoever appertaining or belonging thereunto respectively or in anywise to be had or made therefrom respectively PROVIDED ALWAYS and it is hereby expressly agreed that in any future edition or re-issue of the said pamphlet the Secretary of State is to be at liberty to publish the same with such additions alterations or omissions as may from time to time be considered by him or by the Government of India desirable IN WITNESS whereof the said William Oxenham Hewlett and Cyril Hugh Pennycuick Ducat have hereunto set their hands and seals the day and year first above written.

[Sd.] W. O. HEWLETT.

Signed sealed and delivered by the above named William Oxenham Hewlett in the presence of

[Sd.] G. S. SHERRINGTON, Sol.,
2 Raymond Buildings, Grays Inn.

[Sd.] C. H. P. DUCAT.

Signed sealed and delivered by the above named Cyril Hugh Pennycuick Ducat in the presence of

[Sd.] T. O. BENNETT,
Bruton, Somerset, Land Agent.

From The Government of India, to the Right Honourable Viscount CROSS, G.C.B., Her Majesty's Secretary of State for India,—No. 1, dated Calcutta, the 13th January 1892. [No. 27.

We have the honour to forward, for Your Lordship's information, copies of our orders on the Sanitary Reports of the Local Governments and Administrations named in the margin for the year 1890, and on the Vaccination Reports for the year 1890-91.

PROVINCES.	SANITARY, 1890. Orders.	VACCINATION 1890-91. Orders.
1. Madras	No. 367, dated 9th November 1891.	No. 366, dated 9th November 1891.
2. Bombay	No. 369, dated 7th September 1891.	No. 301, dated 3rd September 1891.
3. Bengal	No. 307, dated 7th September 1891.	No. 343, dated 14th October 1891.
4. North-Western Provinces and Oudh.	No. 330, dated 30th September 1891.	No. 312, dated 18th September 1891.
5. Punjab	No. 292, dated 26th August 1891.	No. 351, dated 24th October 1891.
6. Central Provinces	No. 308, dated 7th September 1891.	No. 350, dated 23rd October 1891.
7. Burma	No. 287, dated 22nd August 1891.	No. 274, dated 6th August 1891.
8. Assam	No. 359, dated 4th November 1891.	No. 329, dated 30th September 1891.
9. Coorg (including vaccination).	No. 499, dated 15th August 1891.	(included in Sanitary).
10. Hyderabad	No. 315, dated 21st September 1891.	No. 286, dated 18th August 1891.

2. In the second paragraph of your Despatch No. 59 (Statistics and Commerce), dated the 22nd August 1889, your Lordship asked us for a Special Report on the establishment and working of the new Sanitary Boards, and again, on the 19th December 1889, you asked for an early report of the action taken and the orders issued by each Local Government under the Sanitary orders issued by us on the 27th July 1888. In reply to the latter Despatch, we informed your Lordship in our Despatch No. 2 (Sanitary), dated the 25th February 1890, of the action taken by Local Governments and Administrations towards the establishment of Sanitary Boards, and in the final paragraph we stated, with reference to the second paragraph of your Despatch of the 22nd August 1889, that, as the several Sanitary Boards must be allowed time to begin practical work, we had requested Local Governments and Administrations to cause a succinct Report of the working of the Boards up to the end of the calendar year 1890, to be submitted as an Appendix to the Sanitary Reports for that year, and that we had also directed them to issue instructions for the regular submission, in a similar manner, of Annual Reports for subsequent years.

3. Since the date of our Despatch of February 1890, the constitution of a Sanitary Board for the Bombay Presidency, consisting of the Sanitary Commissioner and a Sanitary Engineer, has been sanctioned by your Lordship (Despatch No. 74 Statistics, dated the 21st August 1890), but for the reasons explained in our Despatch No. 226, dated the 18th August 1891, a Sanitary Engineer had not been appointed up to that date. The creation of such an appointment outside the cadre of the Public Works Department has been sanctioned in your Despatch No. 69 (Statistics), dated the 8th October last, and it is hoped that an Officer will now be appointed, and the Board formed at an early date. The Bombay Village Sanitation Act, I of 1889* (Bo. C.), provides for the appointment of Local Sanitary Boards and Committees in villages or groups of villages where subordinate agency is required.

* *Vide* Appendix A.

A Sanitary Board has also been constituted in the Punjab since we submitted our Despatch of February 1890, *viz.*, in August 1890. It consists of—

The First Financial Commissioner, President;
The Chief Secretary to Government;
The Secretary to Government in the Department of Public Works;
The Joint Secretary to Government in the Irrigation Department;
The Sanitary Commissioner, who will act as Secretary to the Board;
The Commissioner of the Division in which the Board meets;

and this Board has power to add to its number when discussing any particular scheme or work.

4. An account of the working of the several Sanitary Boards is appended to the Provincial Sanitary Reports, copies of which have already been forwarded to your Lordship direct by Local Governments and Administrations. We have offered such remarks as appeared to be called for in our letters reviewing the Provincial Reports, and it only remains for us now briefly to summarize the action taken in each province.

5. In the Madras Presidency the Sanitary Board, as approved by us, came into existence only on the 1st April 1890, and the Report submitted by the Sanitary Engineer of the Board is consequently of an introductory nature. More substantial results may be expected during the

current year. The Madras Local Boards Act, 1884, has furnished what ought to be an effective agency for village sanitation, by constituting unions to be administered by committees of five, or panchayats, whose principal duties (section 141) are to provide for the cleansing of the village streets, wells and the like, and generally for all things necessary for the preservation of the public health.

The Sanitary Board for the Lower Provinces of Bengal, which was established in December 1889, did not enter fully upon its functions until August 1890, when the Sanitary Engineer joined his appointment. Since then several subjects of importance have engaged the attention of the Board, as shown in their Report. The Local Government has resolved that, for the present, the Board should confine itself to municipal areas in preparing schemes for water-supply and drainage. A general responsibility in connection with village sanitation in the areas under their supervision is imposed on the Union Committees who may be appointed for groups of villages under the Bengal Local Self-Government Act, III of 1885 (B. C.), but no such Committees have yet been appointed. In a letter No. 2, dated the 15th March 1889, we addressed the Bengal Government, pointing out the importance which we attached to the formation of village Union Committees as an agency for the sanitary improvement of rural areas. The Report on the working of District Boards in Bengal for 1890-91 shows that the Lieutenant-Governor is not in favour of calling Union Committees into existence at present, but we have asked His Honour to favour us with a more detailed expression of the reasons which have led him to this conclusion.

In the North-Western Provinces and Oudh good work has been done by the Sanitary Board. The results are summed up in paragraph 5 of our letter, dated the 30th September 1891, reviewing the Sanitary Report. As for village sanitation, Sir Auckland Colvin has just submitted a draft bill, which is designed gradually to secure for all the larger villages a supply of pure drinking-water.

In the Punjab, as already mentioned, the Board was not constituted till August 1890, and no schemes for important sanitary improvements came under its consideration during the remaining portion of that year. Under the final Chapter of the new Punjab Municipal Act (XX of 1891), ample powers have been conferred on the Local Government to enable it to provide for the sanitation of villages.

In the Central Provinces the Sanitary Board, which is composed of the Deputy Surgeon-General (who is also the Sanitary Commissioner) and the Superintending Engineer, met only once during the year to consider a Note of the Chief Commissioner's directing their attention to the question of a sanitary survey of municipalities. In paragraph 6 of our review on the Provincial Report we have directed attention to the necessity for more vigorous action on the part of the Board. Act XIX of 1889 was passed by us in December 1889 in order to provide a means of enlisting the co-operation of the villagers in carrying out simple measures of sanitary improvement in the rural tracts of the Central Provinces.

The Sanitary Board for the province of Burma has been in existence since December 1888, and has made some progress in dealing with questions affecting village sanitation, schemes for the water-supply of municipalities, sewage-farming, and the sanitary improvement of the suburbs of Rangoon.

In Assam the Sanitary Board of the province has inaugurated a scheme of sanitation for selected villages, having for its chief objects—(*a*) the improvement of the drinking water-supply; (*b*) the establishment and maintenance of a proper system of drainage; and (*c*) the prohibition of deposits of manure and rubbish in places where they would be injurious to the public health. The work of sanitation in towns and municipal areas has also been systematically taken in hand under the supervision of the Board.

In the Hyderabad Assigned Districts a Sanitary Board has been created for each district, with subordinate local boards for each village, not being a municipality, and Appendix IV to the Sanitary Report contains their proceedings, showing what they were able to effect during the year.

6. As the working of the Sanitary Boards is still in the experimental stage, it is unnecessary for us to add anything here to what we have said in reviewing the Reports.

[No. 28.] From the Right Honourable Viscount CROSS, G.C.B., Her Majesty's Secretary of State for India, to His Excellency the Most Honourable the GOVERNOR-GENERAL of India in Council,—No. 22 (Statistics), dated India Office, London, the 14th April 1892.

I forward, for the consideration of Your Excellency, and for any remarks you may have to make, a copy of a letter from Miss Nightingale, with enclosures, relative to the better application of the proceeds of village cesses to the purposes of sanitation.

From Miss FLORENCE NIGHTINGALE to the Secretary of State for India, dated London, the 21st March 1892.

ENCLOSURE.

The strong interest which, as Her Majesty's Principal Secretary of State for India, your Lordship has shown in the sanitary progress of that country, and especially the active steps which were taken through the India Office to bring India within the scope of the last International Congress of Hygiene and Demography, embolden me to address your Lordship regarding that branch of the subject in which I take a special and personal interest, I mean, village sanitation.

In the Bombay Presidency much attention has been given by the authorities to this subject. And desirous of helping in this work, I have, during the last five years, been corresponding with several of the leading Native organizations, asking them actively to use their influence in spreading among the villagers an elementary knowledge of sanitary requirements. On the occasion of the Congress I addressed a letter to the Bombay Presidency Association and the Poona Sarvajanik Sabha, urging them to bring before the Congress detailed and accurate information regarding the condition and wants of the rural population. In response to this request the Poona Sarvajanik Sabha sent three papers to be read at the Congress. But at the same time they pointed out the difficulties which attended the progress of sanitation in their province. They stated that, according to their experience, the Bombay Village Sanitation Act, 1889*, failed to produce the desired results, because the Act did not reserve a definite portion of the village cesses to meet the expenses of sanitation, while the rural population were too poor to bear further taxation. They therefore expressed a hope that the Congress might be moved to invite the attention of the Indian authorities to this financial difficulty.

Vide Appendix A.

There was no opportunity of obtaining from the Congress an expression of opinion of the kind desired. But the insanitary condition of Indian rural villages was much discussed at the special Indian meetings held in connection with the Congress. And the accompanying copy of a Memorandum by Members of the Indian Committee of the Congress will show how strongly the need is felt for active measures to reduce existing evils.

In reply to the Poona Sarvajanik Sabha I sent a letter, in which I renewed my plea in favour of popularizing sanitary instruction. But in doing so I felt how little could be done to improve the rural health conditions without adequate funds; and I also felt how difficult it must be to make the cause popular in the villages, if the new movement in favour of sanitation is associated with fresh taxation demands, especially when the villagers have already paid a cess levied to meet the same requirements. Many ancient prejudices have to be overcome, so that it is most important that there should be no fresh grounds of aversion. I have therefore felt it my duty to bring their request to the notice of your Lordship. Through the courtesy of the India Office I have been favoured with the perusal of documents showing the origin of the village cesses above referred to. And I understand that they were originally contributions voluntarily paid for village purposes. Afterwards these cesses were made leviable by law, and the power of directing the expenditure was vested in the Local Boards. But the Government have always recognized the principle of "localization" (as laid down by His Excellency Sir Philip Wodehouse), which gives to village necessities the first claim upon the proceeds of the village cess. From our point of view, reasonable sanitation is the first of these necessities, and therefore we feel strongly that this necessity should be provided for, in preference to the needs less directly affecting life and health.

We *must* live in order to work. We must *live* in order to drive the cart or cross the bridge. Is not the life more than the meat, and the body than raiment? A village free from choleraic and typhoidal poisons is more important to the village population than the best means of communication. Reading the debates on the Bombay Village Sanitation Bill, it appears that the main object of the measure is to constitute a good village organization for purposes of village sanitation. These village organizations for these purposes supersede the Local Board, and therefore it seems that in them should be vested primarily the administration of the funds raised by village cesses for village sanitation. According to this view, the villagers would not require to ask back from the Local Board a portion of the amount paid by them, but in carrying out a *minimum* of sanitation would spend what was absolutely requisite. Ought it ever to have gone from them, from the time that a suitable village organization had been established to administer it? The balance would go to the Local Board for more general local purposes.

In conclusion, I should esteem it a favour if your Lordship would be so good as to inform me whether, in accordance with the recommendation contained in the Memorandum, it might

not be possible for the local authorities under the existing law to cause sufficient funds to be appropriated to satisfy the minimum requirements of village sanitation?

Enclosure in above.

MEMORANDUM.

From the papers read, and the opinions expressed, at the Indian meetings in connection with the last International Congress of Hygiene and Demography, it appears to the undersigned, Members of the Indian Committee, that the insanitary conditions of the rural villages in India is a very serious evil, and that active measures are required to obviate the existing injury to public health.

They understand that, as regards villages in the Bombay Presidency, funds are raised by village cesses for works of local public utility, including sanitary improvements. But under the Local Funds Acts these funds are expended by Local Boards, each of which exercises authority over many villages; and it appears from the Local Boards' Report that in 1890 the Local Boards received altogether 42⅓ lakhs, of which about 26 lakhs of rupees came from such village cesses; but out of this amount only 3⅓ lakhs were spent on village sanitation and water-supply, namely, Rs. 3,17,250 in improving the water-supply, Rs. 4,979 on village sites, including clearing rank vegetation, Rs. 620 on sanitation at fairs, &c., and Rs. 12,780 on conservancy of towns and villages. From this it appears that the amount spent in actual cleansing operations in the village was very small indeed, compared to the amount raised by the village cesses.

In the opinion of the undersigned, the removal of the present sanitary evils in the rural villages is the first necessity as regards these villages, and they would urge on the authorities that reasonable sanitary improvements in each village should be regarded as a first charge on the cess raised in that village.

Until the minimum of sanitation is completed, until the cess of that particular village has been appropriated to this, while typhoidal or choleraic disease is still prevalent, it appears to the undersigned that the claims for any general purposes should be postponed.

Good local communications are no doubt desirable, but they come second in importance to the removal of those insanitary conditions which are undermining the health of the rural population.

[No. 29.] From H. LUSON, Esq., Officiating Under-Secretary to the Government of India, to all Local Governments and Administrations,—Nos. $\frac{5 \text{ Sanitary}}{113\text{—}121.}$, dated Simla, 11th June 1892.

I am directed to forward copy of a Despatch from Her Majesty's Secretary of State, No. 22 (Statistics), dated the 14th April 1892, and its enclosures, regarding the application of the proceeds of village cesses to the purposes of sanitation, and to request that the Government of India may be favoured with any remarks $\frac{\text{His Excellency the Governor in Council}}{\text{His Honour the Lieutenant-Governor (and Chief Commissioner)}}$ may $\frac{}{\text{you}}$ have to make on these papers.

No. $\frac{5 \text{ Sanitary.}}{122}$

Copy forwarded to the Government of Bombay, with a request that the Government of India may be furnished with a copy of that Government's reply to the Despatch from Her Majesty's Secretary of State to His Excellency the Governor in Council, No. 4 (Statistics), dated the 14th April 1892.

[No. 30.] From P. G. MELITUS, Esq., Officiating Deputy Secretary to the Government of India, to all Local Governments and Administrations, Nos. $\frac{8 \text{ Sanitary}}{262\text{—}270.}$,—dated Simla, the 8th November 1892.

I am directed to forward for $\frac{\text{the information of His Excellency the Governor in Council}}{\text{His Honour the Lieut.-Govr. (and C. C.)}}$ and for $\frac{}{\text{your information}}$ any action which may be considered necessary, the enclosed extracts (paragraphs 1 and 15 to 17) from a memorandum by the Army Sanitary Commission on the Madras Sanitary Report for the year 1890.

2. It will be seen that the Sanitary Board in Madras consists of two members, the Sanitary Commissioner, and a special Sanitary Engineer, attached to the Local and Municipal Departments of the Government, whose duty it is to act as adviser to Municipalities and Local

Boards in all matters relating to sanitary engineering. They work in concert, but each has his own especial functions. The Sanitary Commissioner deals with all questions of general sanitation; it is his duty to assist and advise Local Boards and Municipalities in all matters which fall within his province, and to periodically visit all Municipalities and advise the Government as to their sanitary condition. The Sanitary Engineer, acting under the orders of the Local Government, draws up and supervises the execution of schemes for improving the water-supply and drainage of Municipalities, the conservancy of rivers within their limits, and such other works of sanitary engineering as he may be deputed to investigate or carry out. He also assists local bodies generally in respect of the execution of minor sanitary works. No sanitary work, whether original or repair, estimated to cost more than R200 can be undertaken by any District Municipality or Local Board, unless the plans and estimates have first been approved by the Sanitary Engineer. The Sanitary Engineer has a permanent Assistant, who aids him in the preparation of schemes, and carries on the current duties of his office when he is absent on tour. A valuable feature of the system is that, for any important work or group of works, a temporary Assistant can be entertained at the charge of the Municipality or Local Board, to execute the project under the superintendence of the Sanitary Engineer.

3. The Government of India understand that these arrangements have been found very successful, so far as they have as yet been tested by experience. Water-supply schemes and other sanitary works of considerable magnitude are carried out under the direct supervision of the temporary Assistant Engineers, and the system has this special advantage that the entire responsibility for such works rests with the Sanitary Commissioner and a competent Sanitary Engineer, instead of being distributed over the various Municipal and District Committees and local officers, who are prevented by their own proper duties from devoting sufficient attention to the execution of sanitary improvements.

4. With reference to the extract from the memorandum of the Army Sanitary Commission relating to the sewage farm system in the town of Madras, I am to enclose a copy of the Report referred to, and to request that the subject may be suitably noticed in the Annual Sanitary Report.

Extract paragraphs 1 and 15 to 17 from a Memorandum by the Army Sanitary Commission on the Report of the Sanitary Commissioner of Madras for 1890.

Division of Report into Sanitary and Engineering.—This Report is divided into two distinct parts. First, there is the Report of the Sanitary Commissioner with its several sections as before; but with this, which constituted the twenty-seventh Report of the Sanitary Commissioner for Madras, there is the second part of the volume, which comprises the first Report of the Sanitary Engineer to the Government of Madras. The change is not one merely of form. It indicates a new and most important departure in the sanitary work of the province, from which the greatest practical good is to be expected. The appointment of a separate Sanitary Engineer was not sanctioned till the beginning of 1890, and he did not enter on his duties till the 1st of April in that year. His report has therefore reference only to nine months, and is of necessity, to a great extent, merely preliminary. We shall refer to it again in its proper place, but mention it here because we regard the appointment of a special Sanitary Engineer and the preparation and submission by him of a separate section of the Annual Sanitary Report as a step of the utmost importance, and one which might be followed with great advantage in other provinces of India.

15. *Sanitary Engineer's Report.*—The Sanitary Engineer inspected 20 towns, with special reference to the introduction of schemes of water-supply and drainage into some where such works did not exist, and the improvement of water-supply and drainage works already existing in others. Schemes for other towns were also reported on, and a *resumé* is given to show what progress has been made towards providing a water-supply and drainage for each of the 55 municipalities in the Presidency. The work, though only of a preliminary nature, was essential as the first step towards dealing in a practical way with these most important matters, and we learn from the orders of the Government that action has been taken in regard to several of the places concerned. In Ootacamund an extension of the water-supply had been sanctioned; proposals had been called for in order to provide some minor improvements which seemed to be required in the recently executed water scheme for the town of Cuddapah; in others the commencement of the work only awaited financial arrangements; while in those where apathy and want of interest were the cause of delay, the attention of the Municipal Councils concerned has been drawn to the necessity of bestirring themselves in these very important reforms. Such apathy, we are glad to observe, is by no means general, for the Sanitary Engineer reports that

"many towns have eagerly grasped the earliest opportunity of making some advance towards the preparation of schemes for drainage or water-supply."

16. *Sanitary Board.*—The Provincial Sanitary Board commenced operations on the 1st April 1890. It consists of the Sanitary Commission and Sanitary Engineer. There is no separate report of the Board's proceedings, but this omission will be supplied in future volumes, which will consist of three parts, the Annual Report of the Sanitary Commissioner, the Annual Report of the Sanitary Engineer, and the Annual Report of the Sanitary Board, the first two being signed by the individual Officers and the last by both the Members of the Board. The revised instructions for the guidance of the Board are given in an Appendix. The Sanitary Commissioner is to deal "with all questions of general sanitation; the Sanitary Engineer with schemes for improving the water-supply and drainage of municipalities and the conservancy of rivers within their limits, and such other works of sanitary engineering as he may be deputed to carry out or investigate." Copies of the Board's Proceedings are to be forwarded to the local bodies concerned, and a monthly abstract submitted to the Government.

17. *Sewage Farms.*—In one of the Appendices of this volume there is a very interesting Report on the sewage-farm system in the town of Madras. The idea was first started in 1869, and has been acted on with varying success ever since. During the year 1884-85 twelve farms were under sewage irrigation, and the system has ever since continued in extensive operation. As a whole the results have been satisfactory, and it is estimated that, in the future, they will be still more so, and that "the municipality should, during the next three years, from 1st April 1891 to 31st March 1894, realize a profit on the sewage farms of Rs. 12,553, and dispose of considerably more than 4,500,000 gallons of sewage a day." The experience of Madras in this matter is very valuable. There can be little doubt that farm irrigation is an admirable mode of disposing of sewage, and that it is specially suitable to the circumstances of India. Madras has had this advantage over many other places, that there have been no religous scruples or popular prejudices to contend with, such as exist elsewhere; but experience shows that opposition of this kind is likely to disappear when the substantial advantages to be gained are fully appreciated and understood. This Madras Sewage Report might, with advantage, be studied by the Sanitary and other Authorities in all the provinces of India. If the system could be generally adopted with success, it would prove the solution of an otherwise very difficult problem. Even if no profit were realized, it would be a very material gain to be able to dispose of the sewage of Indian towns in an innocuous way.

19th July 1892.

APPENDIX I.

REPORT ON THE SEWAGE-FARM SYSTEM IN MADRAS (TOWN).

The idea of adapting the sewage-farm system to the needs of Madras was first conceived by Mr. Standish Lee, the Municipal Engineer, in the year 1869. No worse site could have been secured anywhere about Madras than that of the first experiment in the neighbourhood of Choolay, which was afterwards called DeMellow's Road. It was a dismal swamp, periodically submerged by salt water, which, on evaporation, deposited a saline mud. The soil was black, plastic and as retentive as stiff clay. Not even a blade of grass grew upon it. Prejudice against the use of sewage at that time was such that, had it not been that a large quantity of it had been discharged for a long time into this swamp, it is probable that the Commissioners would never have sanctioned its adoption, and certainly no better site would have had a chance of obtaining their sanction. The fact that a sewage-farm could be made to succeed, even in such an unpromising locality, was demonstrated within a few months of the commencement of the experiment, and conclusively proved the general principle that this method for the disposal of sewage was applicable to the conditions of an Indian town. The first thing that had to be done was to raise the ground above the reach of the water. This was accomplished by depositing street sweepings and covering them with earth dug out of the place. Probably as much as 25,000 tons of sweepings were used for the purpose. The work commenced in June 1869. In July, the first guinea-grass was laid down. By the end of August, the first crop was obtained. By the end of the year, nearly three acres were under cultivation, and by February 1870 nearly four acres were reclaimed. The first reports on the farm were most favourable, but this satisfactory state of things did not last long. With the advent of the hot weather, 1870, evaporation increased enormously, and, at the same time, the tank waters which had been used to dilute and supplement the sewage fell short. The salt was drawn to the surface. Indeed, the amount of salines in the soil was so great that, even two years after the farm had

been put under cultivation, if the soil was allowed to rest for a few days, a saline efflorescence covered the ground. A large quantity of guinea-grass perished altogether. The hurrialie-grass was not strong. The only grass that thrived was a coarse swamp-grass that grows on the banks of the Coum river and is known as cow-grass. This is not a suitable fodder for horses, though cattle devour it with avidity. Another difficulty that arose was that, after fermentation, the deposited rubbish, which consisted, to a large extent, of vegetable matter, diminished considerably in bulk, and the surface sank irregularly. This threw out the grading of the beds and necessitated a large amount of manual labour. A more or less unsatisfactory state of things continued until Mr. Robertson, the Superintendent of the Government Experimental Farm at Saidapet, visited the place with a view to discovering the defects that prevented any real progress being made. The height of the subsoil water, the temperature of the sub-soil and the condition of the land in various parts of the farm were carefully examined and noted; and it was clearly shown that the main cause of the want of success lay in the sub-soil water, which was found in some places at from 4 inches to 2 feet from the surface. To remedy this, the worst parts of the farm, where absolutely nothing would grow, were broken up to a depth of 18 inches and drained at intervals of 6 feet with pipes running 4 feet below the surface. The result of this was that an excellent crop of grass was obtained with extraordinary rapidity, and since that time no real difficulty has occurred. In other parts of the farm, the less costly method of raising the surface of the farm above the sub-soil water was adopted with the best results. At the present time, 1891, this farm is one of the most remunerative. I have quoted largely from the various reports on the experimental period of this farm, in order to show that the experimenters, without previous experience to guide them, and with all the disadvantages and difficulties that the worst possible site could afford, were able to make a sewage farm which would safely and innocuously dispose of all the sewage that could be obtained for it and, at the same time, yield valuable crops of grass. Since they succeeded under such adverse conditions, there should be no difficulty at the present time, with all the advantages which two decades of experience afford, in adapting the sewage-farm system to the conditions pertaining in any Indian town. As regards the crops, it was found, at a comparatively early period, that grasses did better than anything else, and that guinea-grass gave the heaviest crop, but did not find a ready market, while it had the further disadvantage of requiring an occasional change of soil. On the whole, hurrialie proved the most satisfactory. It grows very readily and speedily, propagates itself by means of runners, affords an excellent food for horses and cattle, and makes a splendid hay. It commands a ready sale, both as green and dry fodder, and will bear considerable extremes of drought and moisture. Later experience has given ample confirmation to these results, and, at the present time, 1891, no other crop is grown on the municipal sewage farms of Madras. Another important lesson was learned in the mode of laying out the beds, and experience has shown that sloped beds, over whose surface the sewage flows evenly by the force of its own gravity, give, on the whole, the best results, and are most easily and economically managed.

In 1870, the Kistnampett farm was started. Here the conditions for sewage-farming were as favourable as, in the former case, they were unfavourable. It was contiguous to the sea-shore. The soil of one-half of the farm was nearly pure sand. The remainder consisted of an old rubbish heap, covered with a thin stratum of sandy soil, taken from the other portion. There has never been the slightest obstacle to the success of this farm. The soil is porous and absorbs like a sponge, permitting the great desideratum of sewage farming—free downward percolation. The only difficulty has been to obtain enough sewage for it. With an adequate supply the grass grown in pure sand is most luxuriant; but, when left for some time without irrigation, it withers and is burnt up, the roots finding no sustenance. In the report on this farm for 1871-72, the Sanitary Officer, Mr. C. E. Gover, wrote—

> From a cultivated area of about 2 acres, we have been able to supply 1,000 lbs. per diem of grass, where sewage is plentiful and throughout the year have maintained an average of 800 lbs. daily. Taking the latter rate, the returns, at 15 lbs. per anna, are not less than R100 per mensem. At 1lb. per anna, the agregate is R150. The monthly expense is only R42, and the farm yields a net profit of R60. The grass at this farm grows so thickly that at a cutting the portion standing looks like a green wall 2½ feet high."

After the first two years the Officers who had started the sewage farm-system in Madras disappeared from the scene, or were detailed for other duty, and apparently the scheme was not extended with the energy and ability that had characterized its inception. Yet there was no retrogression. The cultivation of the existing farms was maintained, good crops were obtained, and from time to time the area under cultivation was extended. The grass found a ready market, but any profit that might have accrued was generally swallowed up by the cost of maintenance and improvements, in addition to which about R2,000 annually were allowed in the budget of the Municipality for the extension of the farms. This money was well laid

out, for the amount of sewage disposed of was considerably increased and the farms became more valuable property.

In 1876-77 two new farms were formed at Triplicane and Egmore, the former of which was subsequently abandoned, as the junction canal took up a good deal of the ground and the farm was found unremunerative. The area under cultivation was thus increased from 8½ to 16¾ acres. The Egmore farm was very small, but it paid its expenses and replaced a most offensive cess-pool, which was much complained of in the neighbourhood.

In 1878, two more farms were started at Royapuram and Royapettah. At the end of the year, the sewage-farms in operation were—

First division, Rayapuram.	Seventh division, Triplicane.
Fourth division, DeMellow's Road.	Eighth division, Kistnampett.
Fifth division, Egmore.	Ninth division, Royapettah.

In 1879, ten years after the adoption of the system, the profit and loss on the farms were as follows:—

Loss.	Rs. A. P.	*Profit.*	Rs. A. P.
Rayapuram	263 12 7	DeMellow's Road	1,106 13 8
Triplicane	14 6 0	Kistnampett	1,918 0 1
TOTAL	278 2 7	TOTAL	3,024 13 9

There was thus a net profit over and above what was expended on maintenance, etc., of R2,746-11-2. The whole of this profit, however, was swallowed up by the rent, the amount paid being as follows:—

	Rs. A. P.
Kistnampett	2,736 10 4
Triplicane	409 14 7
Royapettah	36 0 0
TOTAL	3,182 8 11

It will thus be seen that the sale of grass, as nearly as possible, paid all expenses of rent and maintenance. During this year, a considerable portion of the Napier and People's Parks was also put under sewage irrigation, and the receipts for the sale of grass were R3,311 and R4,192, respectively. Subsequently, the same system was adopted in the Robinson Park, which, at that time, was not in existence. Occasionally, one or other of the farms would suffer a loss from insects, which destroyed the grass, and a crop would have to be burnt to get rid of the pest.

In the Report for the year 1881, mention is made of two new farms, Salt Cotaurs and Wall Tax Road, which diverted four Black Town sewers from the canal.

In the year 1882, the Black Town drainage scheme was commenced. A large well at Royapuram was the first work undertaken. All the sewers were to converge there, and all the sewage was to be lifted by steam pumps through a sewage discharge pipe, 24 inches in diameter and 4,600 feet in length, to the outfall channel north of the town. The outfall channel began where the discharge pipe ended, and was designed to carry the sewage to an outfall into the sea at a spot more than 2 miles north of the pumping station. It is an open masonry channel lined with cement, and is 7,664 feet in length. At the present time, this channel traverses gardens irrigated with sewage and ends in a large farm. A small quantity of sewage, which reaches the end, percolates through the sand on the sea-shore. During the same year, three large sewers were diverted from the Cooum to a pumping station in the Napier Park. Also a large sewer that discharged its contents into an arm of the canal was diverted to form a sewage farm at Therupully Street.

During the year 1883, no new farms were started, but the old ones were carried on. The Robinson Park was opened at Rayapuram, and a considerable part of it was devoted to raising grass by irrigation with sewage and water.

During the year 1884-85, the large number of 12 sewage-farms were under irrigation, and, on the whole, a profit of R744-4-7 was made as shown below:—

Profit.	Rs. A. P.	*Loss.*	Rs. A. P.
Salt Cotaurs	1,360 3 7	DeMellow's Road	1,260 8 7
Wall Tax Road	745 15 5	Therupully Street	86 6 1
Kistnampet	1,897 9 1	Davis Road	357 1 7
Ummen Covil	15 0 0	Triplicane	1,083 12 4
Poodupett	1 4 0	Egmore	191 12 8
		Black Town	204 13 8
		Royapettah	91 4 7
TOTAL	4,020 0 1	TOTAL	3,275 11 6

The great loss sustained in DeMellow's Road Farm was due to heavy rains, which destroyed between 30 and 40 tons of hay. Also a part of the farm under irrigation was given up to the Mortuary Department as a burial and burning ground.

The financial result of the following year, 1885-86, was not so satisfactory, for there was a loss of R1,733-9-11 on the working of the farms, chiefly due to Black Town and Poodupett, both of which being new yielded a small return in proportion to the expenditure.

During the year 1886-87, the total cost on the twelve farms including rent, was R16,768-3-3, and by the sale of grass and hay R14,719-13-8 was realized. The loss of R2,048-5-7 was chiefly due to the destruction of stored hay by exposure to rain.

During the year 1887-88, the farms realized a small profit, on the whole, of R718-12-10, notwithstanding the fact that there was a loss on Kistnampett of R2,443-12-7, which was, however, more than counterbalanced by a profit on the Black Town Farm of R4,143-2-11.

During the year 1888-89, pumping by means of engines and centrifugal steam-pumps was started at Triplicane, Kistnampett and DeMellow's Road. This proved a great advantage over the old system of baling by picottahs. At the Royapuram Station at this time, there was always one engine at work and one in reserve. A third engine has since been added, and, now that No. II sewer is being opened, the amount of sewage conveyed there will require two engines to be always at work night and day. Steam-pumping in all these cases has proved successful, and resulted in the drains being kept far cleaner than they ever could be before.

The amount of sewage actually discharged by the steam pumps at the present time is as follows :—

Pumps.	Number of hours worked a day.	Average quantity discharged per minute.	Total daily discharge.
		Gallons.	Gallons.
Royapuram	23	2,000	2,760,000
Kistnampett	9	800	432,000
DeMellow's Road	5	600	180,000
Napier Park	4½	800	216,000
TOTAL	...	...	3,588,000

The rest of the baling is done by picottahs, and the amount of sewage lifted by them cannot be estimated with accuracy, depending as it does, in a large measure, on the strictness of the supervision exercised over the picottah men.

Up to the year 1888, the sewage farms were worked departmentally by the Municipality. But early in that year the right of working them on a three-year lease, dating from the 1st April, was put up to auction and sold for a yearly payment of R7,250, making a total of R21,750 for the whole period.

According to the agreement, the Municipality undertakes to pay the rent, establishment, and labour. The contractor must keep in repair the sewers, drains, cisterns, channels, pipes and other things connected with the delivery of sewage in or on the farm. He must dispose of as much sewage on the land as the Municipality delivers. He must cultivate and manage the farms in the most approved manner, and keep them in a clean condition, free from weeds, etc. He must allow free access to the farms to the Officers and servants of the Municipality in order that they may see in what state the farms are kept and whether any part is in need of repair, and, if so, to give notice to the lessee, who must execute the repairs within fifteen days. The contractor has the right of constructing new wells, cisterns, etc., if he first obtains the consent of the Municipality for the proposed work. The Municipality agree not to stop the delivery of sewage at any one time for a period of longer than five days. The contractor has to deposit a Government of India Promissory note for R2,000 as security. Deductions may be made from this in the event of a breach of contract. If a dispute arises between the Municipality and the contractor, each side is to choose an arbitrator, and, if the arbitrators cannot agree, they are to choose an umpire. On the period of three years from 1st April 1888 to 1st April 1891 the Municipality was a loser. The expenditure on the sewage-farms was as follows :—

	1888-89.	1889-90.	1890-91.	Total.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Establishment	78 8 0	881 9 9	960 0 0	1,920 1 9
Overtime	...	53 10 8	100 0 0	153 10 8
Fitter's staff	...	313 1 3	408 0 0	721 1 3
Labour	15,208 4 0	10,066 1 10	10,110 0 0	35,414 5 10
Rent of sewage-farms	902 0 0	966 8 0	912 0 0	2,780 8 0
TOTAL	16,188 12 0	12,280 15 6	12,520 0 0	40,989 11 6

This is exclusive of the cost of the pumping station at Rayapuram, but includes the establishment and maintenance of the steam-pumps and picottahs on the farms.

From this statement it is evident that on the three years the municipality lost R19,239, or rather more than R6,000 a year. A small part of this loss was covered by letting sewage on to private gardens along the outfall channel at the rate of R10 per cawnie per annum (a Madras cawnie is in proportion to an English acre as 160 to 121). The revenue derived from this source varied considerably, but the total for the three years was about R650.

The amount of land under irrigation by sewage during the three years of the contract, which was recently concluded, was as follows :—

	Acres.
Municipal Farms connected with outfall channel	15·70
DeMellow's Road Farm	15·81
Kistnampett	16·03
Egmore	0·38
Royapettah	0·22
Poodupett	2·20
Angalaman Covil	0·60
Davis Road	0·88
Wall Tax Road	4·74
Therupully Street	1·37
TOTAL	57·93
Private lands (gardens, etc.), along outfall channel	38·40
	96·33

The contract was again put up to auction this year, 1891, and was knocked down for R15,600 a year, or R46,800 for the three years from 1st April 1891 to 31st March 1894. This is exclusive of the Wall Tax Road and Therupully Farms, which are this month being discontinued, as the sewage with which they were irrigated will now be carried to the outfall channel by sewer No. II, which is being opened. This sum is nearly R6,000 more than the cost of maintenance, etc., of all the farms for the last three years ; and the cost of maintenance will be reduced on account of the discontinuance of the Wall Tax Road and Therupully Farms. Moreover, the charge for irrigating private lands along the outfall channel has been raised and arranged on a different system. Instead of R10 per cawnie per annum, it is now let at annas 4 per hour for 8 hours a day, which makes a total of R2 a day, R730 a year, R2,190 for the three years. The sewage flows into the municipal farms during the remainder of the day and night. The estimate of receipts and expenditure for the next three years may be taken as follows :—

	Rs.	A.	P.
Estimated expenditure for 1891 to 1894—			
Cost of maintenance, etc., for the last three years	40,989	0	0
Deduction of cost of maintenance, etc., for Wall Tax Road and Therupully Street	5,652	0	0
TOTAL	35,337	0	0
Estimated receipts for 1891 to 1894—			
Contract for the next three years	46,800	0	0
Sale of sewage to private grounds	2,190	0	0
TOTAL	48,990	0	0
Estimated receipts	47,890	0	0
Expenditure	35,337	0	0
Balance	12,553	0	0

From the above figures, it is estimated that the municipality should, during the next three years, from 1st April 1891 to 31st March 1894, realize a profit on the sewage farms of R12,553 and dispose of considerably more than 4,500,000 gallons of sewage a day, when sewer No. II is added and the second engine at Rayapuram is at work. I have omitted from my statement the land irrigated by sewage in the public parks, as I was unable to obtain reliable

figures on the subject. But the profit realized by the sale of grass is a considerable help towards the cost of their upkeep. I have also omitted a large private garden of about six acres at Malapur, a suburb which has no drainage system. The sewage is taken from the street cesspools and carried in covered carts to this garden, where it is given to the owner, free of cost, for the sake of disposing of it without polluting the Adyar river. About 42 iron single bullock carts, 25 sewage carts (holding double the quantity of the former), and 20 hand carts deposit sewage there morning and evening. The owner dilutes the sewage with well water, and uses it principally for irrigating cocoanut, palms and plantains.

In Madras, religious scruples have never interfered with the disposal of sewage by the method under consideration, and popular prejudice has only been such as would occur in the mind of any one unfamiliar with such matters, when presented for the first time with the idea of food for men or animals being grown in sewage. A good many people, European as well as Native, object to vegetables being manured with human night-soil; but there is such an absence of prejudice on the part of some of the native cultivators, that they will take raw night-soil, if they can get it, or remove it from the pits three or four months after it is buried, and before it has undergone those changes through which it becomes converted into a kind of poudrette. It is used for manuring a variety of things, even paddy fields, before wet cultivation is commenced. If there is such an absence of prejudice that even raw night-soil is used by cultivators, it is not likely that there would be any regarding municipal sewage, which contains comparatively little night-soil. And this is found to be the case; for some of the owners of the gardens along the outfall channel are caste Hindus and use sewage for the irrigation of their gardens. In some instances burial and burning grounds are in close proximity to sewage farms. In others, these grounds have been raised by the deposit of street sweepings, which contain some night-soil, but the Hindus apparently do not object to using them for the burial or burning of their dead.

It is difficult to say how religious scruples or popular prejudice might best be overcome from the experience we have had in Madras, where we cannot be said to have experienced any such obstacle. What predisposes people's minds to prejudice against sewage farms is the belief that the grass or vegetables are cut where they are floating in a mass of liquid sewage bedaubing their leaves and stalks, whereas, as a matter of fact, it is necessary for the proper ripening of grass, etc., that no sewage should flow into the ground for ten or fifteen days before the crop is cut; so that, at the time of cutting, the ground is dry, and both the soil and the vegetation growing on it have been freely exposed to the sun and breeze by day and the grass or leaves have been bathed with dew by night. The sweet smell of the new-mown grass and of the hay made from it should convince even the most sceptical that the process is entirely unobjectionable, both on religious, sanitary, and æsthetic grounds.

As regards the crops and plants that grow well under sewage, I may mention that later experience amply confirms the verdict of the early experimenters, that hurrialie is by far the most satisfactory. The late contractor practically grew nothing else on the farms. He had the contract for supplying hay to the Commissariat. He informed me that he put no sewage on the grass for fifteen days before cutting; that after cutting it was well tossed and shaken to get rid of any solid particles that might adhere to the stalks, and that when the Veterinary Department tried the experiment of making an aqueous infusion of the hay, it was perfectly sweet, and no odour of sewage could be detected. Both the grass and hay form excellent nutritious fodder, and the horses relish it. Cocoanut palms are largely irrigated with sewage in private gardens, and chiefly used for toddy. Some of the natives believe that if these trees are fed on sewage for a time and afterwards with water they wither and die. I cannot vouch for the accuracy of this observation, but it is not by any means impossible that it may be correct. Plantains do particularly well in sewage, and the fruit is of fine quality and very abundant. English root vegetables do well and are good. Cabbages and other greens are not so good. Native vegetables, bandecai, brinjals, snake root, etc., are not considered to be so palatable when grown in sewage as when irrigated with water. Still there is a considerable sale for them in Madras. The experiment was once made on a small scale, on one of the municipal farms, of growing paddy in sewage, but the evidence regarding its success is contradictory.

Statement showing the extent to which sewage-farming is resorted to in districts and municipalities from reports received.

	Extent to which sewage-farming is resorted to.	Any religious scruples or popular prejudice to disposing of sewage on farms.
Districts.		
Anantapur	Not resorted to	No impediments to its introduction would be experienced from either religious scruples or popular prejudice.
Bellary	Do.	Very little opposition would be experienced from religious scruples or popular prejudice.
Chingleput	Do.	Cannot say if prejudices, etc., would exist.
Coimbatore	Do.	
Cuddapah	Do.	Night-soil and street sweepings are used as manure, and there are no prejudices to their use.
Ganjam	Do.	Cannot say if prejudices, etc., would exist.
Godavari	Do.	
Kistna	Do.	
Kurnool	Do.	No objections to sewage-farms. Schemes were begun in the towns of Koilkuntla and Nandyal, but were not completed owing to want of funds.
Madura	Do.	No objection to using town sweepings, but object to manure with night-soil in it. Prejudices will not easily be removed.
Malabar	Do.	Said not to be practicable on account of the isolated position of the houses and the prejudices of the people.
Nellore	Do.	Cannot say if prejudices, etc., would exist.
Nilgiris	Do.	The Badagas object to use night-soil in any form as manure.
North Arcot	Do.	Cannot say if prejudices, etc., would exist.
Salem	Do.	
South Arcot	Do.	
South Canara	Do.	
Tanjore	Do.	
Tinnevelly	Do.	
Trichinopoly	Do.	
Vizagapatam	Do.	
Municipalities.		
Ootacamund	Not resorted to	A dairy farm has been started near Ootacamund, and night-soil is taken to it from the town and used with excellent results as a manure for growing oats, hay, and fodder for cattle. The Badagas object to use it, and so European and Eurasian lads are employed as ploughmen. It is intended to start a sewage-farm at the outfall of Ootacamund lake and to use the sewage of the bazar which discharges there into a stream, and some night-soil will also be taken to this farm.
Cooncor	Do.	Night-soil and sweepings are sold to planters as manure.
Mangalore	Do.	For some time now the municipality has been endeavouring to utilize the night-soil by converting it into poudrette and selling it as manure for vegetable gardens, etc. Considerable quantities are taken sometimes to coffee estates above the ghâts. Still there are, on the whole, no steady or great demands for it.
Rajahmundry	Do.	Some lands are manured with night-soil and some with the town sweepings, but the use of night-soil is unpopular, probably due to the people not being acquainted with its value as a fertilizing agent and to some religious and sentimental objections to its use. If the value of sewage for irrigating and manuring purposes were shown, there is every reason to believe it would become popular.
Calicut	Do.	Sewage farming is not practicable owing to the isolated position of the houses and caste prejudices.
Palghat	Do.	It was proposed to start a garden in which night-soil might be used, but the Council gave it up, as it thought vegetables grown with such manure would not find a market.
Telicherry	Do.	Very great popular prejudices against its use.

Statement showing the extent to which sewage-farming is resorted to in districts and municipalities from reports received –continued.

	Extent to which sewage-farming is resorted to.	Any religious scruples or popular prejudice to disposing of sewage on farms.
Municipalities—contd.		
Adoni	Not resorted to	Night-soil and sweepings are now being sold, and, from the statements of those who have used them, it would appear that they are more valuable as manure and have more fertilizing power than cow-dung, ashes, etc. There are no prejudices to their use.
Viziagapatam	Do.	There are popular prejudices against using night-soil for agricultural purposes.
Anakapalle	Do	Sewage is used to water the flower trees in the municipa office compound, and they are in a very thriving condition. There are no prejudices to its use.
Vizanagram	Does exist	The most part of the sewage of the Vizianagram town is let out by means of two main drains, one on the eastern side of the market and the other on the east side of Kauspa. They both end in two reservoirs, from which the same is carried into the paddy fields. The paddy and other crops grow richly by the sewage, and the cultivators are in the habit of manuring their fields with the same. No rent is charged on the people, as the reservoirs into which the town sewage is let into are the private property of the Maharaja. The municipality derives no benefit from it, as it has been long customary that the whole sewage of the town is used by the ryots of the Tavastanam for their fields, and it has long been treated as right of water-course to the reservoirs above-named, and which are owned by the Tamustanum from time immemorial.
Guntur	Not resorted to	No objections to its use.
Salem	Exist on a small scale	Sewage-farming was introduced on a small scale in 1889-90. A piece of private land was leased out for an annual rent of Rs. 30 and converted into a sewage-farm. The site has been approved by the District Medical Officer, Salem. There does not appear to be any religious scruples or popular prejudice in the general adoption of this method in this town.
Mayavaram	Not resorted to	* Endeavours are being made to try one.
Gudiyatam		
Walajapet		
Tirupati		
Vellore		
Chidambarm		
Cuddalore		
Conjeeveram		
Mannargudi		
Tanjore		
Kumbakonam		
Negapatam		
Cochin		
Cannanore		
Cuddapah		
Karur		
Erode		
Coimbatore		
Bimlipatam		
Palamcottah		
Tinnevelley	Do.	*Nil.*
Tuticorin		
Madura		
Dindigul		
Periyakulam		
Palni		
Srirangam		
Trichinopoly		

* Refers only to Mayavaram.

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Statement showing the extent to which sewage-farming is resorted to in districts and municipalities from reports received—concluded.

	Extent to which sewage-farming is resorted to.	Any religious scruples or popular prejudice to disposing of sewage on farms.
Municipalities—concld.		
Ongol	Not resorted to	*Nil.*
Nellore		
Cocanada		
Ellore		
Bezvada		
Masulipatam		
Berhampore		
Chicacole		
Parlakimedi		
Vaniyambadi		
Tirupatur		
Bellary		
Kurnool		
Anantapur		

[No. 31.] From the Chief Secretary to the Government of Madras, to the Secretary to the Government of India,—No. 1947 L. (Miscellaneous), dated Fort St. George, the 25th August 1892.

I am directed to reply as follows to your letter No. $\frac{5 \text{ Sanitary}}{113}$, dated the 11th June 1892, forwarding copy of a Despatch from Her Majesty's Secretary of State, No. 22 (Statistics), dated the 14th April 1892.

2. I am to point out that the village cesses of the Bombay Presidency, alluded to in paragraph 2 of the memorandum enclosed in Miss Nightingale's letter, include local rate (which corresponds to the land cess of this Presidency), certain tolls, and a few other items, as appears from Appendix V. F. (4) to the Administration Report of the Bombay Presidency for 1889-90.

3. In the Madras Presidency land cess and tolls were not originally levied to meet the sanitary requirements of villages, but to provide for the construction and maintenance of communications. A portion of the land cess was, however, utilized for sanitary and other purposes; and as the demands on Local Funds increased, it became necessary to raise additional revenue for the purpose. Under Act V of 1884 (Madras) a house-tax was imposed, which is collected by the Village Panchayats in villages which have been constituted Unions under that Act, and spent by them under the general control of the Local Boards on purely local purposes, such as the construction of village roads, drainage, and other sanitary needs. The Local Boards provide for the conservancy of other villages.

4. The expenditure on village sanitation has generally exceeded the receipts from the house-tax, as will be seen from the enclosed Statement (A), which shows (for the last five years) those receipts, the expenditure on sanitation in Unions, and the expenditure on sanitation in the Presidency. The Statement (B) enclosed shows (for the same period) the number of Unions established and that of other villages that have been from year to year brought under conservancy.

5. Thus, in this Presidency, the whole of the village cesses proper are expended on village sanitation under the Union organizations which are steadily extending; and they are largely supplemented by appropriation from the general local taxation, which is as large as can reasonably be expected with reference to other demands on local revenues. The opposition to the taxes levied in Unions is considerably less than it was; and these are signs that the people are beginning, if not to appreciate sanitary improvements in villages, at least to tolerate the existing taxation for the purpose. While that taxation may be, and is being, extended by the formation of new Unions every year, it would, in the opinion of His Excellency the Governor in Council, be most inadvisable to increase the rates or the incidence of it, and in this Presidency all that can be done is to await the development of village sanitation on existing lines.

A.

Statement showing the receipts from house-tax expenditure on sanitation in Unions, and the total expenditure on sanitation for the five years ending 1890-91.

No.	Years.	Receipts from house-tax.	Expenditure on sanitation in Unions.	Total expenditure on sanitation.	Remarks.
		Rs.	Rs.	Rs.	
1	1886-87 . . .	36,539	58,833	2,51,529	
2	1887-88 . . .	96,488	1,50,857	3,17,566	
3	1888-89 . . .	1,16,754	1,76,630	3,74,284	
4	1889-90 . . .	1,52,874	2,06,971	4,84,616	
5	1890-91 . . .	1,75,490	2,21,048	4,06,014	

B.

Statement showing the number of Unions and other villages conserved for five years ending 1890-91.

No.	Years.	Unions.	Other villages.	Total number of Unions and other villages conserved.	Remarks.
1	1886-87 . . .	136	426	562	In the first two years the several villages included in each Union were treated in some cases as separate units, but in the remaining three years each union was taken as a single unit.
2	1887-88 . . .	218	411	629	
3	1888-89 . . .	239	434	673	
4	1889-90 . . .	246	489	735	
5	1890-91 . . .	252	566	818	

From T. D. Mackenzie, Esq., Chief Secretary to the Government of Bombay, to the Secretary to the Government of India,—No. 3090, dated Bombay Castle, the 2nd September 1892. [No. 32.]

In reply to Mr. Officiating Under-Secretary Luson's memorandum No. 5—122, dated 11th June 1892, I am directed to forward, herewith, a copy of the Despatch No. 22, dated 2nd September 1892, with enclosures, addressed by this Government to Her Majesty's Principal Secretary of State for India, in reply to His Lordship's Despatch No. 4 (Statistics), dated 14th April last, which forwarded for the consideration of this Government copy of a letter from Miss Nightingale, with enclosures, relative to the better application of the proceeds of village cesses to the purposes of sanitation.

From the Government of Bombay, to the Right Honourable Viscount Cross, G.C.B., Her Majesty's Secretary of State for India,—No 22, dated Bombay Castle, the 2nd September 1892.

With reference to Your Lordship's predecessor's Despatch, Statistics, No. 4, dated 14th April 1892, forwarding, for our consideration and remarks, copy of a letter from Miss Nightingale, with enclosures, relative to the better application of the proceeds of village cesses to the purposes of sanitation, we have the honour to transmit, for your Lordship's consideration and for communication to Miss Nightingale, copies of the Reports noted in the margin from the Commissioner in Sind, the Divisional Commissioners, and the Surgeon-General with our Government.

No. 1110, dated 18th June 1892, from the Commissioner in Sind.
No. 2100, dated 17th June 1892, from the Commissioner, N. D.
No. P.-1084, dated 20th June 1892, from the Commissioner, C. D.
No. P.-723, dated 21st June 1892, from the Commissioner, S. D.
No. 5152, dated 11th August 1892, from the Surgeon General with this Government.

2. While recognizing fully that the proposals made by Miss Nightingale and the gentlemen who have signed the memorandum attached to her letter are obviously prompted by a genuine desire to promote the welfare of the rural population of this Presidency, we are not prepared to recognize the correctness of the views—

(*a*) that the first call on the village cesses should be sanitation;

(*b*) that it is possible under the existing laws to require the local authorities "to cause sufficient funds to be appropriated to satisfy the minimum requirements of village sanitation," or

(*c*) that there exist "insanitary conditions which are undermining the health of the rural population."

3. With reference to the first of these heads, Mr. James, the Commissioner in Sind, has, in paragraph 6 of his report, correctly pointed out that "when the local cess was first instituted,—and for six years it was a voluntary contribution in the Bombay Presidency,—Government distinctly stated that the object was to provide 'roads (including village wells and public buildings, the planting of road-side trees and other works of public utility) and schools'." So far as these cesses are concerned, the only modification in the policy of this Government, as regards the object of their levy, has been in Act III of 1869, to add sanitation to the improvement of roads, water-supply, and education.

4. As to the second, Mr. James has, in the same paragraph of his report, shown that "if all the Local Fund schools were shut up, and the construction and repair of all public work stopped, the amount available for each village would be only ₹90 per village, a sum too trivial for any practical good" for the purposes of sanitation as expressed in the memorandum, *viz.*, "cleansing operations in the village." The reports of the Commissioners, as well as that of the Surgeon General, show that what we consider the most essential measure of sanitation, the improvement of the water-supply, has had a large share of the attention of the Local Boards; while in addition to this, we have, during the last four years, allotted annually to each Division the sum of ₹10,000 from Provincial Funds as a grant-in-aid of this desirable object, and we have further, during the past and the current years, allotted special grants of one lakh of rupees for the same purpose.

5. We would further, as regards "the cleansing of villages," point out that over the greater part of the Deccan and Southern Maratha country the caste of "Bhangis," which deals with the removal and disposal of night-soil, is non-existent; that even the large municipalities in those parts have the greatest difficulty in obtaining that class of servants, as is indicated in the latest Report of the Sanitary Commissioner (paragraphs 124, and 140—144), and that it would be impossible for village communities to procure them.

6. As to the third proposition, that there exist "insanitary conditions which are undermining the health of the rural population," we would draw special attention to the able and lucid Report by our Surgeon General, and more particularly to his 15th paragraph, which, in our opinion, conclusively shows that there are other causes at work than "insanitary conditions" to account for the high death-rate prevalent in India—causes which have apparently not been considered by the sanitary authorities in England. Dr. Pinkerton's Report, as well as those of the Commissioners, give, in our opinion, sound reasons why Miss Nightingale's proposals cannot be accepted.

* *Vide* Appendix A.

7. As regards the application of the Village Sanitation Act,* it must be admitted that the difficulty as to the provision of funds pointed out is a real one; but for the removal of this difficulty we must look to the spread of education and knowledge of the advantages of sanitation. Compulsory taxation under the Act can raise but a small sum; but there is no reason why in the course of time voluntary self-taxation by the villagers under the provisions of this Act should not supply adequate resources for the improvement of their condition. But for this a great advance in knowledge is necessary, and for that advance we must look to two sources: 1st, the constant pressure of the Government officials as advisers of the people and in their magisterial and executive capacity, and 2nd, that advocated by Miss Nightingale in her letters to the Poona Sarvajanik Sabha of 16th February and December 1891, *viz.*, the influence of the educated classes as missionaries of sanitary reform. We, equally with Miss Nightingale, deprecate any increase of compulsory taxation in the cause of sanitation, and at the same time we would point out that while we are confident that, where it is feasible, Local Boards will willingly aid Village Sanitary Boards, we consider that, local self-government being on its trial, it would endanger its successful establishment to interfere with the means it has at present for the supply of local needs.

8. In conclusion, we would request permission, (Miss Nightingale's letter and accompaniments having been published in the Bombay newspapers,) that our reply may be laid upon the Editor's table.

Accompaniments to the Despatch to Her Majesty's Principal Secretary of State for India,—No. 22, dated the 2nd September 1892.

From—H. E. M. JAMES, Esq., C. S., Acting Commissioner in Sind, to His Excellency the Right Honourable the Governor and President in Council, Bombay,—No. 1110, dated Karachi, the 18th June 1892.

As requested in Mr. Under Secretary Harvey's endorsement No. 1891 of 8th June 1892 and telegram of the 15th instant, I have the honour to return the Secretary of State's Despatch Statistics, No. 4 of 14th April 1892, and to submit the following remarks on Miss Nightingale's suggestion that the local cess should be primarily devoted to the sanitary requirements of rural villages.

2. While entertaining the greatest respect for Miss Nightingale's views, and cordially admiring the interest shown by that benevolent lady in the welfare of the people of India, and acknowledging at the same time, from a European point of view, the defectiveness of Indian village sanitation (though I believe this defectiveness to be often exaggerated), I regret that I cannot accept Miss Nightingale's proposal as the best means of removing it.

3. It is comparatively but a short time since the natives of India came into close contact with European ideas, and at the present moment the influence of those ideas is scarcely felt amongst the masses of the uneducated. Even amongst those who have received an education in British schools and colleges (with the exception, perhaps, of a few Europeanized families) sanitation is, if not entirely unpopular and disliked, at least uncared for, and a belief in its benefit does not exist. In the whole of my service I have only met with one native gentleman who had studied and understood the subject, and who thoroughly realized the importance of cleanliness to health. I refer to the Honourable Ranchhodlal Chhotalal, C.I.E., and the reason for this general apathy is not far to seek. A love of sanitation is merely a sign of progress in civilization and a token of the desire of people to live in an atmosphere of greater comfort and refinement than their forefathers endured. Yet we find the bulk, I will not say all, of the most advanced and learned, as well as the most wealthy natives, even in the Presidency towns, still quite content to live in the squalid domestic surroundings which contented their predecessors. Even where fashion has led natives to adopt foreign habits in some respects, such as in furniture and apparel, the imitation of Europeans has not, as a rule, extended to those parts of the house and its enclosure which are dedicated to sanitary purposes. Improvements in that quarter bring, according to natives' ideas and especially from the point of view of the females of the household, no additional comfort or pleasure. Their adoption confers no distinction amongst the rest of the community. Therefore, no stimulus exists to bring them into use, but rather the reverse; for sanitary appliances cost money, of which a native of India is very careful. It was not indeed to be expected or desired that a few years in the neighbourhood of civilization should disturb the popular habits of centuries. If we reflect that scarcely two generations ago our own present habits of cleanliness and our modern sanitary appliances were almost unknown in civilized Europe, the impossibility will be admitted of attempting to enforce them on a people who do not feel their want, and have not yet been trained to appreciate their own sanitary deficiencies. I quite admit that this argument must not be pressed too far, and also admit that slow progress is being made, especially in large towns. But what I wish to emphasize is that when sanitation is a matter of indifference and even of dislike to the enlightened amongst the Indian community, it is hopeless to attempt, I will not say any drastic, but any general reform in this direction amongst the millions who constitute the rude agricultural population.

4. Far more important than sanitation are, in my humble judgment, the physical and intellectual needs which the Local Boards, with the limited funds at their command, do their best to supply. Facilities of communication, good roads and bridges, schools and dispensaries are provided as far as possible to meet the requirements of the villages which supply the money. The sanitary education of the rayat, through the above indirect means, is more likely to be successful than by artificially cleansing his village streets, sweeping up rubbish for him, providing latrines which he would never use, or scattering deodorizers when the hot sun of the east is a far more powerful disinfecting agent. Funds are not so large that Local Boards can afford to waste them. Everything spent on enforced sanitation would be at the expense of what the rate-payer himself, if asked, as well as I myself, would consider far more important and useful objects.

5. This leads me to note one great objection to Miss Nightingale's proposal, *viz.*, that it runs counter to all the recent policy of the Government of India in its endeavour to give to natives of India a real interest and share in local self-government. District Officers can, it is true, do much towards guiding local bodies to the most prudent way of expending their funds. But were they to ask the District and Taluka Boards to spend money on sanitation instead of making and repairing the roads and bridges, which enable the rate-payers to send their produce to

market quickly and at a quarter of the former expense, the opposition would be too great to be overcome, except by pressure of a distinctly objectionable kind. Legal power to use such pressure exists in the case of municipal towns, and it is sometimes necessary to exert it, in order to ensure the simplest sanitary duties being carried out. But no District Officer would think of exercising such a power in order to force the rural rate-payers to divert money from their roads and schools to sanitation. The injustice of such pressure would be far too apparent.

6. When the local cess was first instituted,—and for six years it was a voluntary contribution in the Bombay Presidency,—Government distinctly stated that the object was to provide "roads including village wells and public buildings, the planting of road-side trees (and other works of public utility) and schools". In Bengal, which followed Bombay, the cess is still called the road cess. Although the Bombay Village Sanitation Act, 1889*, to the passing of which I was personally opposed, allows of contributions being made from Local Funds for sanitary works, I am bound to say that, in my opinion, the expenditure of any substantial portion of the cess upon sanitation would be a distinct breach of faith with the rate-payers, and I submit that the only just way of raising money for sanitation is by an extra cess or tax, such as the Bombay Village Sanitation Act (section 18) admits of, though only to the extent of not more than one-half of the local cess paid by the village. If popular opinion inclines to this new taxation, the sum raised by it would be very large in the aggregate, being for the whole of the Bombay Presidency, including Sind, no less than 12 lakhs of rupees. But even this would give an average of only R45 for each village, a sum which would not pay the expense of a single sweeper per village for half a year. The fact is that the rural population is so enormous, broken up amongst so many villages, that if all the Local Fund schools were shut up, and the construction and repair of all public works stopped, the amount available for each village would be only R90 per village, a sum too trivial for any practical good. It has therefore been recognized from the first that each village cannot expect expenditure within its own precincts. The funds must be spent mainly on large works for the benefit of the taluka and district, saving only occasional special works like wells in specially selected villages.

Vide Appendix A.

7. I have not, I confess, much knowledge of the working of sanitary laws in England; but in rural villages in my own part of the country, the farmers, petty shopkeepers, and agricultural labourers in villages are not, I believe, taxed in order that their streets may be swept, their dunghills interfered with, and their natural and domestic habits revolutionised. To the best of my belief any proposal from a village in England to take a portion of the highway rate or school-board rate for such purposes would not meet with favour. I fail to see, then, why the road and school rates in this Presidency should be misapplied in the manner proposed. I may observe, too, that it seems to be assumed, as a matter of course, that the sanitation of Indian villages is unspeakably bad. But I venture to differ. I have seen villages in England in quite as filthy condition as the average village of India. Moreover, every year the value of manure is becoming more appreciated in India, and that of itself will lead to dirt being removed and uncleanliness reduced.

8. One most valuable sanitary need to which I have already alluded once, *viz.*, a copious supply of pure water, has, in the tropical climate of the Bombay Presidency, always been considered an exception to the rule restricting the application of the public works portion of the local funds to roads, buildings, schools, and works of that kind. District and Taluka Boards never overlook their duty of improving the water-supply by digging new wells, cleaning and repairing old ones and in other ways. But great care has to be taken lest money should be thrown away even on so good an object as this. I once ascertained that out of a considerable number of new wells made by the Local Fund Committees in a Gujarat district during ten years, 50 per cent. were useless, the water having become too brackish to drink, and too foul even for washing: 25 per cent. were only fit for washing, and 25 per cent. alone contained good drinking water.

9. It would also be a mistake to suppose that nothing is being done even now to improve village sanitation. In Sind, for instance, the zamindars or leading men are being taught to cut down jungle and rank vegetation close to the villages, and in very bad cases of nuisance, the ordinary law is enforced. Sanitary primers are taught in schools, municipalities are being forced to set a good example. More than all, local organizations are in the course of introduction into some of the larger villages in Sind, in the shape of Sanitary Committees founded mainly on the lines of the Hindu Panchayats which have from time immemorial carried out small sanitary improvements by voluntary combination. But I anticipate that these bodies will effect very little improvement without the constant superintendence of European or Native officers who have been educated to view sanitation more or less from a European stand-point. The cost of similar superintendence in every rural village, or even in every group of villages, puts the introduction of

such a staff, on however small a scale, out of the question. I am strongly of opinion, as I said. at first, that the rural population must first be educated gradually, and learn their failings Till then any expenditure by Local Boards on sanitation, except for the supply of pure water where really necessary, would be not only unjustifiable and unpopular, but money thrown away.

10. I am therefore, as your Lordship will perceive, quite unable to concur in Miss Nightingale's proposal that the local authorities under the existing law should cause sufficient funds to be appropriated to satisfy the minimum requirements of village sanitation. Until each village has its school, until female education is a reality instead of a mere dream, until roads are constructed and streams bridged, in all of which only a beginning has been made, it would be bad administration to spend funds that might be utilized on overt works of utility, upon a crusade against sanitary defects. To do so would be to sacrifice the substance for the shadow. It would render the agricultural classes, already suffering from the bad working of our laws for the recovery of debt, still more discontented. And I go further, and distinctly traverse the *dictum* of Sir George Birdwood and his co-signatories that "good local communications are second in importance to the removal of those insanitary conditions which are undermining the health of the rural populations." Those gentlemen should, I think, be asked, instead of indulging in vague generalities, first of all to prove that the health of the rural population is being undermined any more now than it has been for the past 2,000 years; secondly, to state what the insanitary conditions are to which they refer; and thirdly, to produce a definite, concrete, and practical proposal for the removal of those conditions. If they follow ardent sanitary reformers like the late Dr. Hewlett, I understand that they would prevent any native of India answering a call of nature where his ancestors have done it for centuries; they would forbid the accumulation of manure heaps in a rayat's back yard; they would require the waste bathing and cooking water to be carried outside the village instead of being scattered in the streets. In short, they would demand a revolution in the habits of the people which could not be enforced even in a small percentage of villages except at an enormous and absolutely prohibitive expense, and which from its domiciliary interference and from the fact that it was done at the expense of his roads and schools, would render the Government odious in the eyes of the chief bulwark of its power, the cultivators of the soil. *Festina lente* is a good motto in India, and should never be forgotten when pressing sanitary, or any other, reform on a conservative oriental people.

From W. W. Loch, Esq., Commissioner, N. D., to the Chief Secretary to the Government of Bombay,—No. 2100, dated Camp Bandra, the 17th June 1892.

With reference to Government memorandum No. 1986, dated the 15th instant, forwarding a copy of a letter addressed to the Secretary of State for India by Miss Nightingale, I have the honour to remark that the correspondence appears to raise two questions: (1) whether, as the law now stands, Government can direct Local Boards to allot fixed sums to Village Boards and Committees for sanitary objects, and (2) whether it is desirable that such allotments should be made.

2. I think that there can be no doubt that, as the law at present stands, Government cannot order Local Boards to allot funds in aid of Village Boards and Committees. Under section 65 of the Local Boards Act of 1884, the Collector can arrange for the execution of any emergently necessary work, and can recover the expense from funds belonging to the Local Board whose duty it was to have performed it. This section does not apply; and under section 66 Government can arrange for the execution of any duty which a Local Board fails to perform, and can recover the expenses in the same way. It is not, however, one of the duties imposed by section 30 of the Act on Local Boards to allot money to Village Committees and Boards, and section 40 of the Village Sanitation Act has left it optional for Local Boards to assist these bodies.

3. Before proceeding to consider the second question, I would point out that Miss Nightingale appears to have been misled by some remarks of the Poona Sarvajanik Sabha into the belief that the Village Sanitation Act* had failed, owing to the difficulty of raising the necessary funds for sanitary purpose. The Act can hardly be said to have failed, as it has practically not been brought into force; but the difficulty which the Poona Sarvajanik Sabha have pointed out is a real one.

* *Vide* Appendix A.

4. I think that it is desirable that Government should have the power to fix the allotments to be made by Local Boards to Village Committees and Boards, and to enforce their payment; as a matter of fact, I hope that Local Boards will, as a rule, be ready to give their village fellows a chance of usefulness; but Government ought to have the power of interfering where a Local Board is obstructive.

5. I do not, however, wish it to be thought, because of the opinion expressed in the preceding paragraph, that I am in favour of any general system of grants from Local Board Funds to Vil-

age Boards and Committees, for I consider that any arrangement of the sort would tend to the wasting of money; the Local Boards would be impoverished, and the villages would be none the cleaner. I have very strong doubts as to the utility of spending small sums of money on so-called sanitation in a number of villages, and I have a higher opinion of the value of communications than Miss Nightingale and the gentlemen who signed the memorandum. I believe that money well spent on roads, which allow the cultivators to get their produce to the railway, and which encourage the extension of cultivation, is of greater advantage to the people, than money unsatisfactorily spent on sanitation, and I cannot help thinking that the little grants made to villages will practically be wasted. Miss Nightingale asks if the life is not more than meat and the body than raiment; it seems to me that the life would fare very badly without the meat, and the body without the raiment, and the first duty of Government is to aid the people in getting the meat and the raiment. One of the best methods of doing this is to improve communications.

6. One result of a system of grants to villages for sanitation will be the impoverishment of the Local Boards. The sums granted will be small individually, but in the aggregate they will be very considerable. As it is, many of the Local Boards are hard pressed for funds, and the new drain on their resources, will cripple them very seriously. Nor do I think that the villages will be benefited. Much has already been done by the Local Boards towards improving the water-supply, though I will readily admit that more ought to have been done. I do not, however, think that the work will be carried out better under the proposed system; on the contrary it would, in the majority of cases, lead to greater waste owing to the great difficulty of exercising any supervision. Beyond the water-supply the main object on which a Village Board would spend money would be a scavengering establishment of some sort. At present there exists in many villages a sytem of sweeping the main roads; the Village Boards would, I presume, spend their fund in paying minute wages to village Bhangis or Mahars who will take the money and do the work they have always done. Whether I am right or not in the view I take, I think that it will be generally admitted that at first it will be unwise to apply the village sanitation to more than a few selected villages, which is the course which Government proposes to take. Any general application of the Act at this stage would inevitably lead to great confusion, and would entail very heavy work on District Officers.

7. Before ending, I wish to point out that the gentlemen who signed the memorandum attached to Miss Nightingale's letter have not given the Local Boards full credit for all their expenditure for the improvement of the public health, for they have not noticed two important items—the grants made for vaccination and to dispensaries; this money is spent as directly for sanitary purposes, as money expended on sweeping village roads and clearing away prickly-pear.

Memorandum from G. B. REID, Esq, Acting Commissioner, C. D., No. $\frac{P}{1081}$ dated Poona, 20th June 1892.

Returned with compliments.

2. Every one must sympathize with the deep interest taken by Miss Florence Nightingale in the subject of village sanitation, but the undersigned is afraid that both she and the Indian Committee of the Congress have rather mistaken the principal intention of the Local Fund Acts. Sanitation has only lately been regarded as a subject of the first importance, and there is no doubt that, from the very beginning, the Local Funds were spent much as they are now, and that this is in accordance with the views of the framers of the Acts. The preamble of Bombay Act III of 1869 is: "Whereas it is expedient to provide funds for local works of public utility and convenience and to make better provision for education and sanitary improvements in the Presidency of Bombay." Undersigned would also refer to the introduction to "Acts relating to Bombay Local Boards," published in 1887 by Mr. A. G. Cumming, Assistant Collector, Sind Commission, which gives a clear account of the history of the Local Funds. From this it is pretty clear that the main intention of the Act was not village sanitation only, or primarily. In fact there is no doubt that the village cesses referred to by Miss Nightingale were, in nine cases out of ten, sums levied, or even more usually bodily service exacted from the villagers, to make and repair tanks and wells, and repair banks and roads. These levies, or this customary *corveé* (if it may so be called), were often supplemented by contributions from small discretionary grants placed by Government at the disposal of the Commissioners, Collectors, and other Revenue Officials. Many of these works, such as the wells and tanks, were of primary importance from a sanitary point of view, as they increased the supply of drinking water, but it is nearly certain that in those earlier days they were regarded from the point of their "utility and convenience," rather than from a strictly sanitary point. As to the present administration of the Local Funds there is always room for discussion whether in a particular district too much or too little is spent on roads, *versus* tanks or wells, or *vice versâ*; but on the whole there is not the least reason to

suppose that the present system of administration of Local Funds expends less on sanitary purposes than was contributed to similar purposes under the old system of "village cesses." There has been an increasing tendency of late to put on Local Funds charges which may more appropriately be considered as Provincial charges, *e. g.*; upkeep of roads of more than local importance, vaccination, dispensaries, etc., and it is certain that if the Local Boards could be relieved of these charges, more could be spent on village works. In fact in this direction the Local Boards, from no fault of their own, have drifted from their original use in supplying village wants, and a return to their more legitimate functions would be welcomed in many quarters.

3. Again, there is of course no doubt that if all work on roads, rest-houses, etc., was stopped, and that money devoted to village sanitation, the latter might be a good deal improved; at any rate, the water-supply would be improved. But unless Government is prepared to replace the present expenditure on roads, etc., out of Provincial or Imperial Funds, the idea is impracticable.

4. With all due deference to distinguished names on the Indian Committee of the Conference, it seems that, in the present state of Indian village communities in this Presidency, there would be no advantage in laying down that the sanitary improvements in each village should be regarded as a first charge on the cess levied on that village, and that the claims for any general purposes should be postponed till this is done. The plan would be practically unworkable. But Government have lately, under the system laid down in their Resolution No. 2800, Financial Department, and Circular letter No. 424, General Department, dated respectively, the 7th September 1888 and 31st January 1891, taken a very important step by allotting certain sums to be spent for wells and water-supply, on condition that it is supplemented by twice the amount from Local Funds, or other local sources. This is, in my opinion, one of the most useful ways in which money can be spent, and any extension of it that Government funds will allow will be most serviceable.

5. Miss Nightingale is of course right in stating that the object of the Bombay Village Sanitation Act* is to provide "a good village organization for purposes of village sanitation," but the undersigned cannot agree with her that, in order to effect this desirable object, the whole of the existing organization of the Local Boards is to be broken up. The present power given to the Local Boards under section 40 of the Village Sanitation Act are very large. There is not the least reason to doubt that the Local Board will be ready to help any village that shows any desire to help itself, and the undersigned would strongly deprecate any change in the direction of transferring the Local Fund administration to Village Committees except under the sanctions and safeguards at present provided.

Vide Appendix A.

6. In fact, it seems to the Commissioner that the present Acts go far enough, but there are other agencies from which much may be expected. The first is the constant pressure of the Government officials, both as advisers of the people and in their magisterial and executive capacity. There is no doubt that they can do immense good by visiting the villages, and impressing on the villagers the necessity of improved sanitation.

7. The second has already been ably discussed by Miss Nightingale in her letters to the Poona Sarvajanik Sabha of February 16th 1891, and December 1891, published in the *Times of India* of the 14th instant. This is the influence of the educated class as missionaries of sanitary reform. There can be no better work for the educated classes to undertake, and it is hoped that the Sabha and other similar bodies will see the necessity of it.

From J. F. FLEET, Esq., C.I.E., Acting Commissioner, S. D., to the Chief Secretary to the Government of Bombay,—No. P. 723 / 59 Confl., dated Belgaum, the 21st June 1892.

I have the honour to reply to the Government memorandum No. 1986, dated the 15th instant, which forwarded for my remarks a copy of a letter addressed by Miss Florence Nightingale to Her Majesty's Secretary of State for India, on the subject of village sanitation in the Bombay Presidency.

2. Miss Nightingale quotes a statement by the Poona Sarvajanik Sabha to the effect that the Bombay Village Sanitation Act, No. I of 1889*, has failed to produce the desired results, because it has not reserved a definite portion of the village cess to meet the expenses of sanitation, while the rural population is too poor to bear further taxation. She argues that there were originally village cesses which were voluntary contributions for village purposes, including sanitation; that these cesses were subsequently made compulsory, leviable by law, and the control and expenditure of them has now been transferred to the District and Taluka Local Boards; that on the principle of localization, village necessities have the first claim upon the

* *Vide* Appendix A.

village cesses; that sanitation is the first of those necessities; and that as, for the purposes of sanitation, the village organizations supersede the Local Boards, those organisations ought to be provided with funds, not by any allotments which the Local Boards may give back to them out of their revenues, nor by fresh taxation, but by being allowed their first claim upon the village cesses before any portion at all of them is handed over to the Local Boards. And she concludes by asking whether, under the existing law,—(here I understand the reference to be to section 40 (1) of the Village Sanitation Act*, by which the Local Boards are authorized to assign donations and loans out of their revenues to the Village Sanitary Committees),—it may not be possible for the authorities to cause sufficient funds to be appropriated, without fresh taxation, to satisfy at least the minimum requirements of village sanitation.

*Vide Appendix A.

3. This question can be answered, I think, with only an emphatic negative.

4. The application of the Village Sanitation Act* is still in so inchoate a condition,—(in this Division it has not yet been introduced anywhere; the matter is only in the preliminary stage of considering ways and means),—that neither the Poona Sarvajanik Sabha nor any one else can formulate any opinion as the result of experience in respect of its failure or success. And the expression of opinion given by that body, that the Act has already failed, may be completely disregarded. The Act may be found to fail hereafter, because the working of it depends too much upon voluntary contributions. But this is a different question altogether.

5. The rest of the case depends upon the assumptions that in every Indian village there are intelligent and public-spirited persons, combining in organised action, who are not only competent but also willing to deal with questions of local self-government; that they recognize sanitation as a primary necessity of existence; that their ancestors formerly paid voluntarily a special cess for sanitary purposes; and that the British Administration has interfered with their action, particularly by absorbing that cess into funds which are applied to more general purposes.

6. But no one who has a practical experience in the executive department of the up-country life and institutions of India can subscribe to such views. There is no indication that, even when, under the Native Governments of former times, the village system was intact, and the slightest attention was ever paid to sanitary requirements. History has never disclosed the existence of any such sanitary cess as is alleged. And there is probably no country in the world, with any pretensions to civilization, in which less heed of sanitary considerations is taken by the natives, or in which the rural population is more indifferent about, and incapable of, combined action for its own welfare, otherwise than under close and unremitting official superintendence.

7. Whatever theorists may urge, no practical administrator will admit that sanitation is the primary necessity of existence; with education it is one of the secondary necessities; and it is a secondary necessity without which the natives of this country have contrived to thrive very well for many hundreds of years. Our first task in India was to establish peace between the widely different and antagonistic sections of the community; to introduce order, fixed principles, and law, in all the departments of the Administration, and to open up the internal resources of the country by means of improved communications. Education was wisely left alone until sufficient progress had been made in more practical and vital directions. It has now had its turn of attention. And at length the way having been paved by other measures, by education among them, by the introduction of municipal administration and conservancy, by improvement of the water-supply, by the enforcement of vaccination, and by other preliminary steps of a general kind, sanitation has come up for detailed consideration.

8. We, out here, know well enough the general difficulties, due to the ignorance and prejudices of centuries, that have to be overcome. And that is why, instead of introducing the Sanitation Act broadcast, it is about to be applied tentatively in only a few specially selected villages of each district.

9. And we know also the special difficulty that lies before us in the shape of want of funds. It is not easy for Europeans, accustomed to the parish, district and county system,—results of eight hundred years of constant and rapid progress in civilization and wealth,—to realize what this difficulty is. But it may perhaps be made clear to them by the following figures for a typical village, selected at random in the Belgaum District; and the process will help to show how inappreciable is the amount of fresh taxation that may possibly be imposed, and how unreasonable is any outcry against it.

10. I take the case of Chandgad, which is the chief town of the mahal or sub-division of Belgaum Taluka, which, again, is one of the primary sub-divisions of the district. The area of the town and its land is as nearly as possible six square miles, and the population is 2,120. The total of the 1-anna local cess,—which has been assumed, but, as stated above, quite mistakenly to include an ancient sanitary cess,—is R96. Of this, R32 are set apart by the law for education

This reduces the public works portion to R64, or, if for illustration, we restore the former value of the vanishing rupee, to six pounds and eight shillings sterling (£6-8-0). And this is all that the inhabitants of the town are rightfully entitled to have spent upon local requirements. Outside communications are, of course, provided for from other sources; but this amount,—a little more than one guinea per square mile, and altogether only £6-8-0 per annum,—is all that is properly assignable for constructing and maintaining roads in the town and from the town to the highway, wells, tanks, a charitable rest-house, a revenue and police office, and all the other public works that are necessary for the town itself.

11. How is it possible to further reduce so insignificant an amount by making it provide also for the new charge of sanitation? The necessity for sanitation being admitted,—and it is fully recognized by the Indian authorities of their own accord,—the creation of special funds is unavoidable. And, taking again the case of Chandgad, we may now examine the extent to which the demand may press upon the inhabitants.

12. The town was selected for the application of the Sanitation Act. And in accordance with the law, which looks first to voluntary subscriptions, a call for such contributions was made upon the inhabitants. But not a single penny is forthcoming in response. If, then, it is finally decided to apply the Act, which is by no means certain, the funds must of necessity be raised by a special rate. By section 18 of the Act the amount that may be levied is limited to one-half of the total local cess, *i. e.*, to R48, or nominally £4-16-0. And this gives an incidence of a little over 4 pies, or nominally one half-penny per head of the population per annum. In the case of a people whose wives and daughters wear gold and silver ornaments, which many members of even the lower middle classes of England would be glad to own, what substantial cause for complaint can possibly be found here?

From Surgeon-Major-General J. PINKERTON, Surgeon-General with the Government of Bombay, to the Chief Secretary to the Government of Bombay,—No. 5152, dated Bombay, the 11th August 1892.

With reference to your endorsement No. 2560, dated 25th ultimo, I have the honour to invite the attention of Government to my letter to you, No. 7104 of 8th December 1888, which deals with sanitary affairs, and I also beg to submit the following remarks on Miss Nightingale's letter to the Secretary of State for India, dated London, 21st March last, and on the memorandum printed at the end of it with the signatures of ten gentlemen, three of whom are retired Medical Officers of large Indian experience, who had risen to the head of the Indian Medical Service in Madras and Bombay.

2. I think the Government do not wish me to enter into any details of the financial part of the matter, and I feel sure that it will be better done by the Revenue Officers than I can do it; but I would here notice that the Sanitary Department's expenditure is connected with village sanitation—vaccination is directly so, and so in some measure is the expenditure on account of dispensaries and hospitals. These of course are *curative* rather than *preventive*, but Civil Surgeons inspect the large towns in their districts and advise in sanitary matters connected with these towns. In some instances the dispensary Medical Officers are also sanitary Officers in the villages in which their charges are situated.

3. Miss Nightingale's complaint is mainly that the villages do not get for sanitary improvements an adequate share of the village cess, and it seems to be implied that little or nothing has been done in the way of improving the sanitary condition of villages. Although I do not know what share of the 1-anna cess goes to village sanitation, yet it seems to me obvious that villages could not do much in the way of general sanitary improvements from a share of that cess, because the sum each village could get would be extremely small.

4. I have had 36 years' experience in the Bombay Presidency, and I can affirm that very great improvements have been effected both in towns and villages. I will mention some of the more prominent improvements that have taken place in the past 30 years, which I have myself observed in my many tours of inspection.

5. The streets now are kept clean and many have side gutters; I remember when the village streets were not much better than refuse heaps, and it was common enough to see the half-wild pigs and the pariah dogs seeking their food among the refuse thrown on the streets. The side gutters are of great use in carrying off storm-water and even ordinary sullage. Both of these formerly made the streets into quagmires.

6. Formerly the manure of the village was kept close to the dwelling-houses; now one sees it often placed at some distance from the human dwellings. The human excreta has from time immemorial been usually dropped in the fields outside the villages, and is a fairly good and suitable sanitary method. The house enclosures are now much cleaner than they were formerly;

7. In some of the larger villages " pit privies " existed and were a great evil, inasmuch as they contaminated the subsoil and the well water. These have not been abolished, but new ones are not allowed to be built, and a considerable number have been closed by their owners, and I think it is probable in a few years a great many will be closed. The young and educated Hindu is beginning to understand the value of pure water to insure good health.

8. Formerly villagers dug holes on the edge of their villages to get material to make mud-plaster for the repairs of the walls of their buildings or for the erection of new buildings. This practice has ceased, and now they go further afield for such material. These holes in close proximity to villages were most insanitary, as they were in the dry season often used as privies and in the rains they filled with water which washed refuse, etc., into them. The villagers have filled up these holes in close proximity to their villages, to the great advantage of the health and comfort of the people.

9. For years back efforts have been steadily made to remove rank vegetation from the immediate neighbourhood of villages, and considerable improvements have been made by removing the cactus or prickly-pear, but this is by no means an easy thing to do. This bush is very difficult to destroy, because the smallest piece of it takes root and grows on the smallest bit of even the worst soil, it cannot be burnt, and even the hot Indian sun can hardly dry it up so as to destroy its vitality. Clumps of prickly-pear in close proximity to villages are an evil in several ways: they are used as privies, they give cover to snakes, rats, etc., and they prevent free perflation of air. In former days the prickly-pear hedge formed fortifications to villages against their enemies. Many villages have now cleared away this bush as well as other rank vegetation from the immediate proximity of their houses.

10. Wells have been greatly improved. Formerly many wells had steps leading down to the water, and the villagers dipped their vessels in the water after having washed them in the well. Most wells were unprotected by a dwarf wall and had no covering, so that everything moved by the wind could find its way into the water. Now in most places steps to the water are being removed, and dwarf walls placed around the mouth. In many instances, wheels, chains and buckets are placed over the well-mouth, so that private vessels do not touch the water.

11. Tanks were formerly used very often for bathing man and beast, for washing clothes, and in some instances also for drinking purposes; but when it is remembered that the Hindu usually takes mouthfuls of the water he bathes in to wash his mouth, it can be easily understood that such tank water must have been very foul. Now in many places tanks are set apart for a particular purpose—one for washing the cattle, another for bathing, and another for drinking purposes.

12. In the large and wealthy cities water-works and drainage schemes are being carried out, but it is impossible for villages to raise much money for expensive sanitary works, nor do I think it would be wise to tax the village rayats for sanitary works: when the whole conditions of their lives are considered, it seems to me unnecessary. In the past 30 years there has been an immense deal of good sanitary work done that has cost very little, and has been done by the villagers themselves, guided by the District Civil Officers, and it is reasonable to suppose they will go on making inexpensive improvements.

13. One of the best and most powerful aids to improvements is education in general, which has been spreading so freely over this Presidency. In particular the use of sanitary primers in the vernacular schools I consider to be of the greatest importance. The boy and girl who have read it at school will not forget its teaching when they are adults, and have an influence in their villages.

14. In Miss Nightingale's letter there are no facts given to show what the evil conditions in villages are, which, she says, exist in Indian villages. It must, of course, be admitted that our villages are not perfect in sanitary conditions, but it is no exaggeration to say the same of the villages of the United Kingdom. Not long ago I saw people living under the same roof as their cattle in the west of Scotland, where the people are famous for their physique and good health. I admit the dwelling-houses of many villages in this Presidency look bad, but they are not nearly so bad as they look; for though they often have no windows or chimneys, the ventilation is abundant through the walls and roofs. It must also be remembered that here the villagers do not live in their houses for eight months in the year; they work, eat, take their recreation and sleep in the open air, and even in the other four months many of the family sleep in sheds, where their atmosphere is practically the open air. The climate is such that neither good houses nor fine clothes could in any way contribute very much to the health of the mass of the people.

15. Sanitarians in England, it has always seemed to me, have inferred from the death-rate that the insanitary conditions here are very bad and are the main causes of the high death-rate, and I further think these sanitarians have been, in a great measure, misled by our own enthusias-

tic Sanitary Officers, by Government Resolutions, and by the Army Sanitary Commission in London. Does an undoubtedly high death-rate absolutely indicate insanitary conditions, and are such conditions the cause of our high death-rate? I answer *No* to both questions. I believe that the high death-rate is due mainly to two causes: first, racial, and second, early marriages. As regards racial cause, I say that the Dravidian naturally lives a shorter time than the European, or even than the native Aryan in India, just as the horse lives shorter than the elephant, and the canary than the parrot, and the monkey than man. The second cause is obvious: a large number of immature boys and girls marry and beget children too feeble to maintain life. Now these two great factors are hardly ever mentioned in public records regarding either death-rates or sanitation. The early marriage cause is not so bad as it looks perhaps, because Nature does not favour the bearing of children by women under 18 years of age; still a very considerable number do have children before that age, and amongst these the death-rate is believed to be very high.

16. Since 1863 I have been travelling all over this Presidency, with the exception of the 6 years I held charge of the European General Hospital, Bombay, and the 2½ years I had furlough. I have visited all the *sadar* towns many times; I have been to some thousands of villages, first as a Superintendent of Vaccination, later as Superintendent-General of Vaccination, and last as an Inspecting Administrative Medical Officer, and I think I have had exceptional opportunities of seeing the improvements slowly going on in our villages; and I would say to this Government in all matters of sanitation, move slowly, lead and guide, but do not press the people. The Hindu of to-day is moving in sanitary matters much faster than we did in the United Kingdom forty years ago.

From H. H. RISLEY, Esq., C. I. E., Officiating Secretary to the Government of Bengal, Municipal Department, to the Secretary to the Government of India,—No. 578 T.-M., dated Darjeeling, the 29th June 1892. [No. 33.]

I am directed to acknowledge the receipt of your letter $\frac{5 \text{ Sany.}}{114}$, dated the 11th June 1892, with which you forward a copy of a Despatch* from the Secretary of State, with its enclosures, regarding the application of the proceeds of village cesses to the purposes of sanitation, and request that the Government of India may be favoured with an expression of the Lieutenant-Governor's opinion on the question.

*No. 22 (Statistics), dated the 14th April 1892.

2. In reply I am directed to say that there are no village cesses in these Provinces. A series of proposals for the introduction of such cesses was submitted to the Government of India with Mr. Cotton's letter No. 865, dated 15th April 1890. It is understood, however, to be unlikely that action will be taken on that letter. An expression of the present Lieutenant-Governor's views both on the imposition of new taxation and on the general question of village sanitation was laid before the Government of India in my letter No. 6 T-M., dated the 28th April 1892. While cordially sympathizing with the objects which Miss Nightingale has in view, and fully recognizing the value of her influence and advice in such matters, Sir Charles Elliott nevertheless does not at present see his way to the introduction into Bengal of any village cess, the proceeds of which should be definitely appropriated to village sanitation. I am to add, however, that if some machinery can be devised for enlisting the co-operation of the people themselves, the Lieutenant-Governor would be prepared to undertake legislation for the purpose of improving the water-supply and drainage of the rural districts of these Provinces, and that it is proposed to hold a Conference of engineering and sanitary experts and representative natives to consider the subject at Belvedere on the 18th of next month. The results of this Conference will be communicated to the Government of India.

From W. H. L. IMPEY, Esq., Secretary to the Government of the North-Western Provinces and Oudh, to the Secretary to the Government of India,—No. 403, dated Naini Tal, the 18th August 1892. [No. 34.]

I am directed to acknowledge the receipt of your letter No. $\frac{5 \text{ Sany.}}{115}$, dated the 11th June 1892, and enclosures, regarding the application of the proceeds of village cesses to the purposes of village sanitation, and in reply to submit the following expression of the opinion of the Lieutenant-Governor and Chief Commissioner, for the information of His Excellency the Governor General in Council.

2. Miss Nightingale's remarks have special, if not exclusive, reference to the Bombay Presidency. Whatever may be the case in that Presidency, the statement that the local rates had their origin in cesses levied to meet village sanitary requirements is, as regards these Provinces, incorrect. The local rates in these Provinces represent the road cess, the school cess, the district post cess, and the village police cess. None of these cesses, therefore, had any reference

to village conservancy or sanitation. They were meant to supply local and not village requirements. The internal requirements of villages were regarded, at the time when the cesses in question were first imposed, as the affair of the owners or village headmen who were generally in the position to distribute charges for such objects over the owners and occupiers of houses and lands within the village, without the intervention of the Government.

3. When the cesses were consolidated by legislation into a local rate, and the rate increased in order to relieve and to prevent famines, the objects for which they were originally levied, were clearly recognized in the enactment. The Local Rates Act III of 1878 of the North-Western Provinces provides that the charges specified on the margin shall first be met from the consolidated rate, before the balance is placed at the disposal of District Boards for other purposes of local utility. The Local Rates Act (IV of 1878) of Oudh is similar in its provisions. If the Acts from which District Boards in the North-Western Provinces and Oudh derive their powers be examined, village sanitation will not be found to be mentioned among the objects for which, to the extent of the funds at their disposal, the Boards are specifically required to provide, though it may be held to be covered by the general provision authorizing expenditure on "any other local works or measures likely to promote the health, comfort, convenience, or interest of the public."

(*a*) Relief and prevention of famine.
(*b*) Provincial canals and railways.
(*c*) Village and road police and district post.
(*d* Construction, repair, and maintenance of lunatic asylums.
(*e*) Registration of traffic.
(*f*) Any other matter tending to promote the welfare of the district which it is necessary to place under Provincial and not under Local adminstration.

4. The conclusion thus is that expenditure on village sanitation from Local Rate Funds has neither the support, as regards these Provinces, of ancient custom, nor of statutory injunction. Though the law does not forbid such an application of those funds, it does not enjoin it and no money which might be available from local rates in any district would have any appreciable effect on so vast and scattered an enterprize as village sanitation. The revenues of District Boards, which include such portion of the local rate as remains after the primary charges on it are satisfied, are specifically required by the legislature to provide for roads, schools, hospitals, and other similarly important matters. The provisions of the Act on this point are textually cited in the margin. In practice it is found that in most districts local resources are insufficient for these purposes, and they have to be largely supplemented from Provincial revenues to enable the Boards to meet necessary expenditure. No such reduction could be made in this expenditure as to set free funds sufficient to make any material impression on the sanitation of the thousands of villages composing a district in these Provinces. To permit or advise District Boards to divert expenditure from the purposes above specified to village sanitation, would merely give rise to further calls on the Provincial revenues, which could not be met in the present state of the Provincial finances.

(*a*) The construction, repair and maintenance of public roads and other means of communication.
(*b*) The planting and preservation of trees on the sides of roads and on other public ground.
(*c*) The establishment, management, maintenance and visiting of schools, hospitals, dispensaries, markets, staging houses, inspection houses, and other institutions, and the construction and repair of all buildings connected with these institutions.
(*d*) The construction and repair of public wells, tanks and water-works, and the supply of water from them, or from other sources.
(*e*) The establishment and maintenance of such relief works in time of famine or scarcity, as may be entrusted to the charge of the Board by the Local Government.
(*f*) The establishmentand management of pounds including, where the Cattle Trespass Act, 1871, is in force, such functions of the Local Government and the Magistrate of the district under that Act, as may be transferred to the District Board by the Local Government.
(*g*) The management of such public ferries as may be entrusted to its charge under section 7A of the Northern India Ferries Act, 1878, as amended by this Act.
(*h*) The regulation of encamping grounds and where the Sarais Act, 1867, is in force, of sarais and paraos, including such functions of the Magistrate of the district under that Act as the Local Government may, from time to time, direct.
(*i*) The institution, holding, and management of agricultural shows, and industrial exhibitions.
(*j*) The maintenance of any building or other property which is vested under this Act in the District Board or may be placed by the Local Government under the management of that Board.

5. The policy of this Government is to recognize that village sanitation and conservancy must be mainly the affair of the owners and occupiers of each village. The obligation is very generally recognized as reasonable by those concerned, to the extent at least of providing a water-supply and keeping the village site clean. Legislation is needed to enforce this obligation systematically, to enable owners and occupiers of villages to obtain from Government, on easy terms, advances of money for the construction or improvement of wells within the villages, and to distribute the recovery by instalments rateably over the community. A bill * is now before the Local Council which, in such a tentative and cautious manner as the novelty of the subject prescribes, will, give effect to these principles. It will avoid the very dangerous, because extremely unpopular, expedient of additional very general taxation for an end of which the uses are so little recognized by the masses of the people as those of village conservancy, and it will enforce an old and generally recognized responsibility in the least objectionable manner.

* *Vide* Appendix C.

From H. C. FANSHAWE, Esq., Officiating Chief Secretary to Government, Punjab and its Dependencies, to the Secretary to the Government of India, Home Department,—No. 2155, dated Lahore, 23rd December, 1893. [No. 35.]

I am directed by the Lieutenant-Governor to reply to your letter No. 5—116 (Sanitary) dated the 11th June 1892, which forwarded for any remarks which His Honour might have to offer on a Despatch from Her Majesty's Secretary of State for India—No. 22 (Statistics,) dated the 14th April 1892—giving cover to a letter from Miss Florence Nightingale and a Memorandum by the Indian Committee of the International Congress of Hygiene and Demography on the subject of the application of village cesses to the purposes of sanitation. The Lieutenant-Governor regrets that other demands on his time have prevented him from going into this question and submitting the present Report earlier.

2. Sir Dennis Fitzpatrick entirely agrees with Miss Nightingale in thinking that it will be most difficult to make the cause of village sanitation popular in the small agricultural villages, if the new movement in favour of sanitation is associated with fresh taxation demands; but he would point out that her suggestion for avoiding this is based on assumptions that have no application to the Punjab. Miss Nightingale seems to write under the impression that there were, formerly, village cesses which were paid voluntarily by the people for village purposes, that those cesses have been recently swept into the funds of the Local or District Boards, and that it would be possible to furnish village communities with the means of providing for village sanitation by restoring to them those cesses, or an equivalent for those cesses. This, I am to say, is not the case in the Punjab, however it may be elsewhere.

3. The only cesses levied in the Punjab, in the earlier days of our administration, were the Road cess, the School cess and the Post cess, and these were not paid voluntarily, except in this sense, that there was apparently no express warrant of law for their imposition, and that accordingly the payment of them was provided for, as the payment of the land-revenue was provided for in those days, by getting the zamindars to enter into an agreement (which recent legislation has abolished as a mere formality and a useless one) for their payment. Practically speaking, they were authoritatively imposed upon the zamindars, just as the land-revenue was.

4. Further, the amounts levied on account of these cesses from a village were not appropriated in any way, whether in theory or practice, to expenditure in that village, but were thrown into a common fund for the district. It could not indeed have been otherwise, as the aggregate of the three cesses fell at the rate of only 2½ per cent. of the revenue, and would not on an average have been more than about ₹20 per annum for each village. Moreover, roads, schools and the district post administration, from their very nature, would have to be provided—not separately for each village, but for the district as a whole. It should be added that the income from these cesses was always supplemented by Government, which expended considerable sums annually, not only on the objects just referred to, but on many other local objects, including medical relief and sanitation.

5. Apart from these cesses there was established in 1871, by Act XX of that year, what was called the "local rate," which was a rate on land not exceeding one anna for every rupee of land-revenue, or say about 6 per cent. on the land-revenue. The Act in effect provided that the proceeds of this rate in each district should be made over to a local Committee for that district, who would expend it in the district on—

(1) the construction and maintenance of roads and other communications;
(2) educational objects;
(3) medical relief, lunatic asylums, wells and tanks, tree-planting and "other local works likely to promote the public health, comfort or convenience."

6. In 1878 the second Punjab Local Rates Act, V of 1878, which was intended to impose on the agricultural class a tax corresponding to the license-tax then imposed on other classes for the general purposes of Government, was passed. It recited that "in order to defray the expenditure incurred and to be incurred for the relief and prevention of famine, it was necessary to make a permanent increase to the annual revenues," and that it was expedient for this purpose to impose an additional rate on land. The Act then went on to enact that in lieu of the local rate of 1871, a rate which might amount to about 8 per cent. on the revenue should be levied; that the proceeds of this rate should be carried to the credit of the Government of the Punjab; that that Government should appropriate a portion of these proceeds not exceeding one-fourth for the purpose of increasing the revenues available for defraying the expenditure incurred, or to be incurred, for the relief and prevention of famine in the Punjab, or, if the Governor-General in Council should so direct, in any other part of India; and lastly, that the remaining three-fourths should be allotted for expenditure in the district in which the money was raised, on the same objects as were mentioned in the previous Act. The 2 per cent. additional, levied under this Act, it will be observed, was not a local rate in any sense, but a tax for the general purposes of the Government.

7. The Punjab Local Rates Act, 1878, was repealed by the Punjab District Boards Act, XX of 1883, which was passed to carry out the extension of Local Self-Government proposed in Lord Ripon's time. This latter Act, which is still in force, abolished the old Road, School and Post cesses, which the previous Acts had left untouched, raised the local rate on land to about 12 per cent. on the revenue, provided that four-fifths of the proceeds of it should be credited to the District Fund under the control of the District Board established for each district, and directed that the remaining one-fifth, which it will be observed corresponded to the one-fourth of the local rate of the Act of 1878, and was accordingly not treated as an item of local funds revenue, should be carried to the credit of the Government of the Punjab, to be allotted by it to any District Board in the Province, or expended under its orders in any part of the Province on the objects on which District Boards were to expend their funds within the district.

These objects are defined by Sections 20 and 37 of the Act, which ran as follows :—

20. (1) The following matters shall, subject to such exceptions and conditions as the Local Government may make and impose, be under the control and administration of each district board within the area subject to its authority :—

Duties of District Board.

(*a*) the management of all property vested in the district Board ;

(*b*) the construction, repair and maintennance of public roads and other means of communication ;

(*c*) the establishment, management, maintenance and visiting of public hospitals, dispensaries, sarais and schools, and the construction and repair of all buildings connected with these institutions ;

(*d*) the training of teachers and the establishment of scholarships ;

(*e*) the supply, storage and preservation from pollution of water for drinking, cooking and bathing purposes ; and

(*f*) the planting and preservation of trees.

(2) The Local Government may direct that any of the following matters shall, subject to such exceptions and conditions as it may make and impose, be under the control and administration of a District Board within the area subject to its authority :—

(*g*) the management of any property vested in Her Majesty ;

(*h*) the establishment, maintenance, visiting and management of markets, rest-houses, encamping-grounds and other public institutions, and the construction and repair of all buildings connected with these institutions ;

(*i*) the construction and repair of embankments, and the supply, storage and control of water for agricultural purposes ;

(*j*) the preservation and reclamation of soil, and the drainage and reclamation of swamps ;

(*k*) the construction, repair and maintenance of famine preventive works, and the establishment and maintenance of such relief-works, relief-houses and other measures in time of famine or scarcity as may be entrusted to the charge of the Board by the Local Government ;

(*l*) the registration of births, marriages and deaths ;

(*m*) fairs and agricultural shows and industrial exhibitions ;

(*n*) the establishment and management of pounds, including, where the Cattle Trespass Act, 1871, is in force, such functions of the Local Government and the Magistrate of the district under that Act as may be transferred to the Board by the Local Government ;

I of 1871.

(*o*) the management of such public ferries as may be entrusted to the charge of the board under Section 7 A of the Northern India Ferries Act, 1878, as amended by this Act ;

XVII of 1878.

(*p*) any other local works or measures likely to promote the health, comfort, convenience and interests of the public or the agricultural or industrial prosperity of the country; and

(*q*) any other matters which the Local Government may declare to be fit and proper matters to be taken under the control and administration of the Board.

(3) The Local Government may cancel or modify any direction given by it under subsection (2).

(4) A District Board shall, so far as funds at its disposal permit, make due provision for all matters placed under its control or administration by or under this section.

* * * * * * *

Application of district fund.

87. (1) The district fund shall be charged with the payment of the expenses of the district post, the payment of the expenses of pauper lunatics sent to public asylums from the area under the authority of the District Board, the expenses incurred in auditing the accounts of the District Boards and Local Boards, and such portion of the cost of the Provincial Departments for education, sanitation, vaccination, medical relief and public works as may be held by the Local Government to be equitably debitable to the District Board in return for services rendered to the Board by those Departments.

(2) Subject to the charges specified in sub-section (1), and to such rules as the Local Government may make with respect to the priority to be given to the several duties of the Board or otherwise, the district fund shall be applicable to the payment, in whole or in part, of the charges and expenses incidental to the matters specified in Sections 20, 27, 28 and 29, and to the provision of grants-in-aid to educational and medical institutions, within the area subject to the authority of the District Board, and, with the sanction of the Commissioner, outside that area when such application of the fund is for the benefit of the inhabitants of that area.

8. From the above narrative it will be seen that the history of agricultural rates in the Punjab is totally different from that referred to in Miss Nightingale's letter. There never was, and indeed never could have been, any appropriation of these rates to individual villages here, and the only portions of them that ever were appropriated to any particular purpose were appropriated to education, roads and the district post for the district as a whole. Moreover, they always have been practically taxes imposed by the Government, and not funds voluntarily raised by the people themselves. Sir Dennis Fitzpatrick has thought it necessary to explain all this to preclude misapprehension, but of course the practical question remains whether, taking the position as it now stands, District Boards could not allot more for village sanitation than they at present do, and whether, if they were not disposed to do so, the Government should not take steps, legislating if necessary, to compel them to do so.

9. The aggregate income of District Boards of the Punjab from the local rate is estimated in the budget for the current year at a little over 22½ lakhs of rupees; but they have other incomes as well, some, like school fees, arising from institutions under their charge, and some from sources of income made over to them by the Government, either in return for stipulated services, or to enable them to discharge their general duties; and thus the total income of the Boards is estimated to amount to a little over 28¼ lakhs of rupees.

Now, this seems at first sight to be a very large income, but when it is remembered that there are 31 districts each with its District Board, that the total area of these districts exceeds 110,000 square miles, that they contain a population of 20 millions residing in about 34,000 villages, and that the Boards have to provide in all these districts for the extensive list of objects set forth in the sections of the Act quoted in paragraph 7, one begins to see that such an income may, after all, be an extremely inadequate one.

10. As a matter of fact, the bulk of the income is absorbed by unavoidable annually recurring expenditure, which it would be impossible to reduce. To take some of the largest items—educational charges are estimated for the current year at upwards of 6½ lakhs of rupees, and the Boards, whose views must be regarded to some extent unless Local Self-Government is to become an absolute farce, would, Sir Dennis Fitzpatrick believes, be generally disposed to spend more money under this head. The head "Medical," including hospitals and dispensaries, vaccination and some sanitary charges, amounts to just 3½ lakhs. Repairs of roads, buildings, water-works and other public works, though estimated low this year, come to nearly 5¼ lakhs. Such expenditure cannot be cut down. The Boards cannot, *e.g.*, abolish schools or hospitals or let existing works to fall into disrepair. It is difficult to state with any precision what portion of the income is in practice absolutely at the disposal of the Boards unfettered by obligatory charges; but so far as can be made out, it would seem to aggregate not more than 3 or 4 lakhs of rupees a year for the whole set of 31 Boards. As for the matter of communications to which Miss Nightingale and the Indian Committee of the Hygiene Congress refer, the sum spent by all the District Boards of the Punjab taken together on Original Works Communications in 1891-92 was not much over 1¼ lakhs; the revised estimate for the year 1892-93 is only 1 lakh 60 thousand rupees, and the budget estimate for the current year is only 1 lakh 63 thousand.

11. It would thus not be true to say that District Boards in the Punjab have money at their free disposal which would suffice to establish a regular system of sanitation in every village, and which they prefer to spend on other objects. So far as Sir Dennis Fitzpatrick can judge from the figures before him, if the District Boards were to abandon all expenditure on Original Works and all other expenditure which can be said to be optional, the amount saved would not give on an average more than from ₹15 to ₹20 per annum to each village.

12. At the same time it must be admitted that more ought to be spent by District Boards on village sanitation than has been spent hitherto, and as the proceeds of the local rates will be increased by the new settlements now coming into operation, as moreover the cash balances of the District Funds are at this moment considerably larger than they need be, and as it may be possible to relieve the Boards of a portion of the charges now debited to them on account of the services of provincial establishments, His Honor thinks something can be done in this direction, and he has accordingly issued orders, on the advice of the Sanitary Board, which will, he trusts, ensure a certain sum being devoted annually to the protection of the supply of drinking water in villages, which is the most essential point of village sanitation, and at the same time the point on which we can effect something, without interfering with the people and exposing them to harassment and extortion at the hands of official understrappers.

13. This will probably be as much as our resources will admit of our doing for some time to come, and it is perhaps too soon to form any plans as to what should be done next; but Sir Dennis Fitzpatrick is inclined to think that, next in importance after the supply of good drinking water, comes the drainage of tracts where the surface is swamped and the subsoil water-logged for considerable portions of the year. No doubt what most obtrudes itself on the notice of a casual visitor, especially in the fine dry cold weather season in the Punjab, is the dirty state of the villages with cattle tied up in the house enclosures and heaps of cattle manure lying about, as they used to be in Ireland 30 years ago; but this, while it is a matter any interference in which would be felt as a most severe hardship by the people, has but a very insignificant share in producing the terrible sickness and mortality which prevail at certain seasons in our Punjab villages. The real scourge of the Punjab, from a sanitary point of view, is malarial fever, and, as is well known, fever of that type is worst on tracts which are absolutely free from insanitary conditions of the nature just referred to. Sir Dennis Fitzpatrick is having special enquiries made as to the connection between water-logging and malarial fever, but meantime His Honor may refer, on this point and on the efficacy of drainage works as a remedy, to what is said in paragraphs 9 and 10 of the Review of the last Sanitary Report, copy of which is annexed.

14. In conclusion, it may be observed, that what we really require is money; and, having regard to the present state both of the local and provincial finances, Sir Dennis Fitzpatrick fears that, unless we get assistance from outside, we shall not, for some time to come, be in a position to do much of what it would be desirable to do in the way of sanitation in rural areas. His Honor trusts, under these circumstances, that he may be permitted to suggest to those persons at home, who take an interest in this important subject, that they might render us most valuable aid by raising a subscription among the wealthy and charitably disposed people of England for this object. The prevention of disease among the poorer classes is quite as legitimate an object for charity as medical relief to the poor, and if it be said that we should provide the necessary funds by further taxation, or by raising subscriptions out here, the answer is that we have already reached the safe limit of taxation, and that the few wealthy people to be found in this country can scarcely be expected, for some time to come, to subscribe for the promotion of sanitary measures, the value of which they are as yet scarcely capable of appreciating. Any money that might be subscribed in England for this purpose would be expended in accordance with the best sanitary advice, and, so far as possible, in accordance with any wishes the subscribers might express, and would, of course, be duly accounted for.

[No. 36.] From A. B. NAPIER, Esq., Under Secretary to the Chief Commissioner of the Central Provinces, to the Secretary to the Government of India,—No. 4473, dated Nagpur, the 4th July 1892.

I am directed to acknowledge receipt of Home Department letter No. $\frac{5 \text{ Sanitary}}{117}$, dated the 11th ultimo, forwarding copy of a Despatch, with enclosures, from Her Majesty's Secretary of State, No. 22 (Statistics), dated the 14th April last, and requesting the Chief Commissioner's opinion and remarks on the subject of the application of the proceeds of *village cesses* to the purposes of sanitation.

2. In reply I am to say that in these Provinces village cesses, of the character referred to in the enclosures to the Secretary of State's Despatch, are levied only in villages to which the Central Provinces Village Sanitation Act (XIX of 1889)* has been applied. By section 4 of that Act the sum raised by assessments in the village is to be expended there on conservancy and water-supply in the first place, the maintenance of village roads being the only other use to which it can be applied. The Chief Commissioner, I am to say, is at pains to see that the funds raised are expended on sanitary objects, and among these he places in the front rank, at present, a *pure water-supply* and the construction of good wells as a means to this end.

* *Vide* Appendix E.

3. The District Fund, of which the District Council and Local Boards of these Provinces have the expenditure, is not the proceeds of a village cess, but is composed of rates levied on

landed property, in accordance with the conditions imposed at settlement, and of various other miscellaneous receipts. The expenditure of a portion of this fund on village water-supply is, I am to point out, provided for by the Central Provinces Local Self-Government Act (section 9), and it is known to the Government of India that the Chief Commissioner is now enforcing a scheme under which R50,000 are annually contributed by District Funds and the Provincial revenues towards the improvement of the water-supply and the sanitation of rural villages. The fund thus specially provided for such purposes is, it may be observed, over and above the proceeds of the cess raised in villages in which the Village Sanitation Act is enforced; and as it is expected that the fund will be largely supplemented by voluntary village contributions, Mr. MacDonnell is in hopes that village sanitation in these Provinces will gradually improve.

From F. C. GATES, Esq., I.C.S., Junior Secretary to the Chief Commissioner of Burma, General Department, to the Secretary to the Government of India,—No. 527—3Z.-13, dated Rangoon, the 21st November 1892. [No. 37.]

I am directed to acknowledge the receipt of your letter No. 5—118, dated the 11th June 1892, regarding the application to the purposes of sanitation of the proceeds of village cesses.

In reply I am to say that in Upper Burma no village cesses are levied. The remarks which follow apply, therefore, to Lower Burma only.

2. In Lower Burma, under Sections 4, 5, and 6 of the District Cesses Act, II of 1880, there are levied—

(i) on all lands assessed to land-revenue an annual cess of 10 per cent. on the amount of such revenue;

(ii) in ten small towns a house-tax assessed according to the number of posts in the front of each house, according to the same rates as are mentioned in Section 41, subsection (1), division (A), clause (*c*) of the Lower Burma Municipal Act, XVII of 1884;

(iii) in two towns an annual cess of R2 per house.

There are ten towns which are managed by "town committees," for which separate funds are kept up, and to which, so far as may be, the same rules are applied as to municipalities. These town Committees have no legal status, and a proposal to enact for Lower Burma provisions similar to Chapter XI of the Punjab Municipal Act, XX of 1891, is now under consideration. In four of these towns house-taxes are levied under Section 5 of Act II of 1880. In six there is no direct taxation. The house-taxes levied in these towns are expended on their local needs, including sanitary improvement, and from a sanitary point of view no change of system is required. The principal items of expenditure in 1891-92, of the towns in which house-tax was levied, are shown in the following statement:—

	Danubyu.	Pantanaw.	Lemyethna.	Shwedaung.
	R	R	R	R
General administration and collection of taxes . .	1,046	1,045	722	1,279
Cattle pounds	...	..	60	78
Education	1,706	4,212	2,053	8,135
Hospital and vaccination	300	2,649	240	2,438
Conservancy	2,227	3,505	1,084	7,277
Collection of rents, etc.	2,165	2,213	1,199	3,536
Public Works	2,671	6,012	1,081	3,536

3. The cesses levied under Sections 4 and 6 of Act II of 1880, and the cesses levied under section 5 in towns and villages not administered by town committees, are credited to the District Cess Funds. These funds are administered by Deputy Commissioners subject to the general control of Commissioners of Divisions, and to the approval of the Annual Budgets by the Chief Commissioner. It was contemplated by the Act that the Chief Commissioner should fix certain proportions in which the product of the cesses and house-taxes should be divided among various objects. At first, one-half was devoted to the rural police, one-tenth to the district post, one-tenth to education, and three-tenths to public works and miscellaneous improvements; but this rigid rule was found inapplicable to all districts, and, in December 1883, the Chief Commissioner ordered that in future the proportions should be fixed for each district when its cess fund budget was submitted for the orders of the Chief Commissioner. The proportions formerly fixed have, however, continued to be used as a standard, deviation from which requires explanation. From the 1st April 1886 financial pressure compelled the Local Government to throw upon the district cess funds the cost of Deputy Inspectors of Schools; and at the same time the proportion allotted to education was raised, while that allotted to public works and miscellaneous improve-

ments was lowered to one-fifth. It is therefore out of this one-fifth that rural sanitary works, along with other public works, are now paid for.

4. If sanitary improvements were to be rigidly regarded as a first charge on the cesses levied in each particular village, it would be necessary to constitute for each small town or village a separate fund for the proceeds of the cesses imposed under Sections 4, 5, and 6 of the Act in that village. The expense of keeping such accounts would be manifestly excessive, and even in the case of the cesses levied under Sections 5 and 6, would be out of proportion to any advantage gained. For the current year the estimated yield of the house-taxes levied under Sections 5, and 6 in towns other than those administered by town committees is, only ₹7,900. Moreover, it is very doubtful whether sanitary improvement should be regarded as the first charge on the cesses, and the Officiating Chief Commissioner is not prepared to admit off-hand that sanitary improvement should be preferred to good communications. Good communications are necessary if the people are to prosper, and the greater the prosperity of the people, the greater is their power to afford sanitary works. Sufficient food is more essential to health than a perfect system of sanitation. At present the first charge on the cesses is the maintenance of the headmen and rural police. It has been determined to employ the headmen in the collection of revenue for which they will draw commission, and not, as a rule, to pay the rural policemen at all. The introduction of this new system will be gradual; but when it is complete the remuneration of headmen and rural policemen will no longer be a first charge on the cess funds. According as the new system is developed, so will the cess money hitherto devoted to paying rural police be set free for other purposes, among which sanitation will be included. The Sanitary Board, who were consulted, recommend that one-half of the share of the district cess fund allotted to public works should be set apart for purposes of village sanitation. Copies of the detailed opinions of the Members are submitted. The present share of public works is one-fifth, and the share of sanitary improvement would therefore be one-tenth. The amount which this share would produce for sanitary improvement is shown in the annexed statement. This statement, however, shows one-tenth of the whole District Cess Fund, which includes, besides cesses, receipts from land-rents, markets, cattle-pounds, slaughter-houses, and ferries. Out of ₹11,79,830, these miscellaneous sources produce ₹2,70,000 and the cesses produce ₹9,09,830. These miscellaneous receipts are not subject to the provisions of Act II of 1880; but for convenience of accounting no distinction is made in practice. The Officiating Chief Commissioner considers that one-tenth of the District Cess Fund may be fixed as the sum to be ordinarily devoted to improvement, but that it would be inconvenient to provide for this by law or to keep up separate accounts for each small town and village.

Replies to letter No. 62—68., dated the 4th July 1892, to the Members of the Burma Sanitary Board, on the subject of applying the proceeds of village cesses to the purposes of sanitation.

Mr. R. E. Nelson would devote one-fourth of that portion of the village cess, which is ordinarily expended on public works, to sanitation, water-supply, and general village improvement. Under "sanitation" he would include—

(*a*) provision of common latrines,

(*b*) clearing of village-sites and surroundings of rank vegetation;

and under "general village improvement"—

(*a*) raising sites a trifle above the general level of the surrounding country,

(*b*) filling in all hollows,

(*c*) a thorough system of drainage to carry rain water away from the village-site and its surroundings.

Mr. Nelson would establish a sanitation fund in every district, to be controlled by the Deputy Commissioner, who would carry out and maintain works himself, or through the Public Works Department, and maintain the requisite sanitary establishment of sweepers, etc., through a Committee of village elders or in some such suitable way. He does not advise that the control of the funds should be handed to the village communities, as he is sure that would end in a *fiasco*.

Dr. P. Dalzell certainly thinks that a fair share of the 10 per cent., tax referred to in section 4, Burma District Cesses Act, 1880, should be devoted to providing a pure water-supply for each village; one or more good wells, according to population, should be sunk, when the nature of the soil permits of it, near each village. Dr. Dalzell is of opinion that no special reappropriation of funds for village conservancy should be necessary. The inhabitants of each village should be required to help in keeping it in a sanitary state. In the absence of information to the proportion in which the 10 per cent. cess is allotted for police, educational, and other purposes, he is unable to say how much of the tax should be applied to sanitation, but sanitation has a greater claim on the fund than, for instance, education.

Mr. D. Joscelyne concurs in the opinion expressed in the Memorandum appended to Miss Nightingale's letter.

Dr. T. F. Pedley is strongly in favour of the proceeds of village cesses being, as far as possible, devoted to sanitation. Village populations will surely take more interest in sanitation when they see the village cess, or part of it, spent on minor measures for securing cleanliness and comfort in their villages, instead of, as now appears to be the case, its being used for purposes which are to them remote or unknown.

Statement showing the amount of one-tenth of each District Cess Fund in Lower Burma.

District.	Amount.	District.	Amount.
	R		R
Akyab	12,516	Bassein	9,494
Northern Arakan . . .	34	Henzada	8,858
Kyaukypu	1,924	Thayetmyo	2,982
Sandoway	1,012	Amherst	8,110
Hanthawaddy . . .	13,234	Tavoy	1,442
Pegu	17,246	Mergui	1,046
Tharrawaddy . . .	8,936	Toungoo	1,846
Prome	4,520	Shwegyin	5,300
Thôngwa	19,056	Salween	420

From F. C. DAUKES, Esq., Secretary to the Chief Commissioner of Assam, to the Secretary to the Government of India,—No. 6624 G., dated Shillong, the 30th July 1892. [No. 38.]

In reply to Mr. Luson's letter No. 5 Sanitary—119, dated the 11th June 1892, regarding the application of the proceeds of village cesses to the purposes of sanitation, I am directed to say that village cesses of the kind referred to in Miss Nightingale's letter, dated the 21st March 1892, to the Secretary of State, do not exist in Assam. Moreover, Assam does not possess any "village organizations", nor would it be possible, in the opinion of the Chief Commissioner, to constitute such "organizations." As regards village sanitation, it is necessary, under the circumstances of the Province, to work through Local Boards, whose funds, aided to such extent as is possible from general revenues, are derived from local rates levied under the Assam Local Rates Regulation of 1879, and are allotted for the purposes specified in Section 12 (*c*) of the Regulation (copy enclosed), which include "local works likely to promote the public health." I am to add that special grants from general revenues are also made to Local Boards to be expended on village sanitation, and whatever is possible in the direction of promoting village sanitation is being done; but there are many difficulties in the way, not the least being the small amount of the funds available for the purpose, and the large demands made both on local funds and general revenues for expenditure in other important directions.

The Assam Local Rates Regulation, 1879.

Whereas it is expedient to provide, in the territories under the administration of the Chief Commissioner of Assam, for the levy on land of rates to be applied to defray the expenditure incurred, and to be incurred, for the relief and prevention of famine, and to local purposes; it is hereby enacted as follows:

Preamble.

Short title.

1. This Regulation may be called "The Assam Local Rates Regulation, 1879."

Local extent.

It extends only to the territories administered by the Chief Commissioner of Assam;

and it shall come into force in such districts, or such parts thereof, and on such dates, as the Chief Commissioner may, by Notification in the *Assam Gazette*, from time to time direct.

Commencement.

Interpretation-clause.

2. In this Regulation—

"Land."

(1) "Land" means land, whether covered with water or not, which is, or in the absence of some express exemption would be, assessable to land-revenue;

"Landholder."

(2) "Landholder," in the case of land assessed to land-revenue, means any person responsible for the payment of the revenue assessed on such land and, in the case of land not so assessed, any person who, if such land were assessed to land-revenue, would be responsible for the payment of the revenue assessed thereon.

"Tenant."

(3) "Tenant" means any person holding land from a landholder and liable to pay or deliver rent therefor.

"The permanently-settled portion of Sylhet." "The permanently-settled portion of Goalpara."

(4) "The permanently-settled portion of Sylhet" means the whole of that district, except the Jaintia parganas; and the "permanently-settled portion of Golpara" means the whole of that district, except the Bhutan Duars;

"Annual value."

(5) "Annual value," used in respect of any land means the following (that is to say):

(*a*) where such land is liable to be periodically re-settled at full rates,—the land-revenue for the being assessed on such land;

(*b*) where such land is situate in any place other than the permanently-settled portions of Sylhet and Goalpara, and the land-revenue of such land has been wholly or in part released, compounded for, redeemed or assigned,—twice the land-revenue which at the current rates of the district for temporarily-settled estates would be assessable on the cultivated portion of such land, less by any reduced revenue payable thereon;

(*c*) where such land has been permanently settled and is assessed to land-revenue,—two rupees for each acre of such land;

(*d*) where such land is situated in the permanently-settled portions of Sylhet and Goalpara and the land-revenue on such land has been permanently released, compounded for, redeemed or assigned,—two rupees for each acre of such land together with a sum for each such acre equal to the average rate of incidence per acre of the land-revenue assessed on the recorded area of the permanently-settled land within the same pargana:

Provided that, when any land to be valued under sub-clause (*c*) or sub-clause (*d*) exceeds four hundred acres in area, or is assessed to land-revenue at not less than one hundred rupees, and any portion of such land has not been cultivated for three years, the annual value of such portion shall not be deemed to exceed the annual profits derived by the landholder from the same:

Provided also that when any land has been acquired under a grant or lease made in accordance with any rules issued by, or under the authority of, Government for the grant or lease of waste-lands for the cultivation of tea, coffee, or cinchona, the annual value shall be ascertained in the following way (that is to say);

if the grant or lease has been made under the rules for the lease of waste-lands in force at the date of the passing of this Regulation, the revenue payable under the conditions of the grant or lease shall be deemed to be the annual value of such land;

if the grant or lease has been made under any other rules previously in force for the grant or lease of waste-lands, it shall be ascertained what would have been the revenue payable at the time of assessment, if at the date of making the grant or lease the rules now in force for the grant or lease of waste-lands had been in force, and such revenue shall be deemed to be the annual value of such land;

or in either of the above cases, if the landholder prefers it, the land actually under cultivation within the boundaries of the area granted or leased during the year previous to the assessment of rates under this Regulation shall be assessed as if it were land paying full rates of land-revenue, and such assessment shall be deemed to be the annual value for the purposes of this Regulation.

This proviso shall not apply to land sold under any rules issued by, or with the authority of, Government for the sale of waste-lands revenue-free, or to any lands leased under any rules for the lease of waste-lands of which the revenue payable under the lease has been subsequently commuted, redeemed, or, compounded for.

Rates assessable.

3. All land shall be liable to the payment of such rate, in addition to the land-revenue and local cesses (if any) assessed thereon, as the Chief Commissioner from time to time directs, not exceeding one anna four pies for every rupee of the annual value of such land.

4. When a rate is imposed on any land under this Regulation, any cess now leviable on such land for any of the purposes mentioned in Section 12 shall cease to be levied on such land; or, if such cess be maintained, a corresponding diminution shall be made in such rate.

Effect of imposition of land rate on cess now leviable.

5. All sums due on account of a rate imposed on any land under this Regulation shall be payable by the landholder, and shall be recoverable as if they were arrears of land-revenue due on such land.

Recovery of rate.

When such land is held by two or more landholders, such landholders shall be jointly and severally liable for such sums.

Explanation.—Sums recoverable under this section in districts where Bengal Act No. VII of 1868 is in force are recoverable, not only in the mode in which demands as defined in that Act are recoverable, but also in any other mode in which land-revenue is recoverable.

6. The Chief Commissioner may, from time to time, by Notification in the *Assam Gazette*—

Powers of Chief Commissioner.

(*a*) appoint officers to assess and collect any rate under this Regulation, and make rules for the guidance of such officers in assessing or collecting such rate;

(*b*) prescribe by what instalments and at what times such rates shall be payable; and

(*c*) exempt any land from liability to pay the whole or any part of such rate.

7. All land-holders shall, on the requisition of any officer appointed under the preceding section to assess and collect a rate, furnish such information as they may be called upon by him to supply regarding the area and class of the land held by them, the extent of such land under cultivation, and the crops grown, and all other information necessary to enable him to determine the annual value of such land as defined in Section 2.

Landholders required to furnish information.

In case of default or refusal to supply such information when required, or if the officer appointed as aforesaid has reason to doubt the correctness of the information supplied, such officer may, personally, or by means of his subordinates, carry out any inquiry on the land which may be necessary, and make any surveys which he may deem essential to the obtaining of such information; and the cost of such inquiry and surveys shall be borne by the landholder in all cases of default or refusal, and, when such inquiry is undertaken in consequence of doubt as to the correctness of the information rendered, if the inquiry and survey made show the information supplied to have been incorrect.

8. An appeal from the order of any officer appointed under Section 6 to assess or collect a rate shall lie to the Chief Commissioner, or to such person as the Chief Commissioner may appoint in this behalf.

Appeals.

The order passed on any such appeal by the Chief Commissioner, or the person so appointed, shall be final.

9. The period of limitation for an appeal under section 8 shall be thirty days from the date of the order appealed against.

Limitation of such appeals.

In computing such period, and in all respects not herein specified, the limitation of such appeals shall be governed by the Indian Limitation Act, 1877.

10. When in the course of any assessment under this Regulation any landholder claims to have the annual value of any land held by him limited in the manner prescribed by the first proviso to the fifth clause of Section 2, the cost of any measurement or local inquiry necessary for the determination of such claims shall be borne by such landholder, and the amount thereof may be recovered from him as if it were an arrear of revenue due in respect of such land.

Costs of assessment recoverable from landholders in certain cases.

11. The proceeds of all rates levied under this Regulation shall be carried to the credit of a General Provincial Fund.

Rates to be carried to General Fund.

12(*a*). From such fund the Chief Commissioner, after paying the expenses incurred in carrying out the provisions of this Regulation, shall, if the Governor General in Council so direct in any year, appropriate such amount, not exceeding one-fourth of the proceeds of the rates assessed in such year under this Regulation, as the Governor General in Council may direct for the purposes of increasing the revenues available for defraying expenditure incurred, or to be incurred, for the relief and prevention of famine in the said territories, or if the Governor General in Council so directs, in any other part of British India.

Appropriation for increasing revenues available for famine purposes.

(*b*) The Chief Commissioner may, from time to time, with the previous sanction of the Governor General in Council, assign from such fund such amount as he thinks fit, to be applied in payment of charges incurred, or to be incurred, on account of such works and undertakings as he may declare to be works of general provincial utility :

Assignment for works of provincial utility.

Provided that the amount so assigned in any year shall not exceed three-eighths of the proceeds of the rates assessed in such year.

(*c*) Subject to such appropriation, the Chief Commissioner shall, from time to time, allot from the said fund such amount as he thinks fit to be applied in each district for expenditure on all or any of the following purposes:—

Allotment for local improvements.

(1) the construction, repair, and maintenance of roads and other communications, and the improvement of river-channels;

(2) the maintenance of the district post;

(3) the construction and repairs of school-houses, the maintenance and inspection of schools, the training of teachers, and the establishment of scholarships;

(4) the construction and repair of hospitals, dispensaries, lunatic asylums, markets, wells, tanks, rest-houses for travellers, and any other local works likely to promote the public health, comfort, or convenience, and the payment of all charges connected with the purposes for which such works have been constructed:

Provided that the amounts so allotted in any year for any district shall not be less than three-eighths of the proceeds of the rate assessed in such district in such year.

13. Any portion of such allotment remaining unexpended at the end of the year in which the allotment was made may, at the discretion of the Chief Commissioner, be re-allotted for expenditure in the same district, or may be applied for the benefit of the Province of Assam in such manner as the Chief Commissioner from time to time directs.

Unexpended portion of allotment.

14. The Chief Commissioner shall establish in each district a District Committee, consisting of not less than six persons, for the purpose of determining how the amount allotted for such district under Section 12 shall be applied, and of supervising and controlling the expenditure of the same; and for the same purpose may, in addition to the District Committee, form as many Branch Committees, consisting of not less than three persons each, as he may think fit, and shall define the portions of the district within which such Branch Committees shall exercise their functions.

Local Committees.

15. The Chief Commissioner may, from time to time, by Notification in the *Assam Gazette*, make rules to define the functions, authority, and mode of proceeding of any Committee or Branch Committee so established, and to prescribe the manner in which the Members of such Committees and Branch Committees shall be appointed or removed:

Power of Chief Commissioner to make rules regarding Committees.

Provided that not less than one-third of the Members of any such Committee shall be persons residing in the district and not in the service of the Government.

16. Accounts of the receipts in respect of all rates levied under this Regulation in any district, and of the allotments made to such district under Section 12, shall be kept in such district in such form as the Chief Commissioner may, from time to time, direct.

Accounts to be kept.

Such accounts shall, at all reasonable times, be open to the inspection of the Members of the District Committee.

An abstract of such accounts shall be prepared annually in English and in the vernacular language of the district, and shall be open, at all reasonable times, to public inspection, at suitable places within the district, without the payment of any fee.

The English abstracts of such accounts shall also be published in the *Assam Gazette*.

17. When a rate is levied under this Regulation from a landholder in respect of any land under sub-clause (*a*), (*b*), (*c*), or (*d*) of clause (5), of Section 2, and such land is held by a tenant of such landholder at a rent less than the aggregate of the annual value of such land, and the revenue (if any) payable in respect of the same, such landholder may realize from such tenant a part of such rate bearing to the whole of such rate the same ratio as the excess of such aggregate above such rent bears to the annual value.

Power to recover share of rate from tenant.

Illustrations.

(*a*) A is the holder of land of the description mentioned in sub-clause (*a*) of clause (5) of Section 2, of which the land-revenue is ₹100. The annual value is therefore ₹100, and the rate at one anna per rupee would be ₹6-4. The land is held by a tenant, B, at a rent of ₹150. Then 100: (200—150) =50 :: ₹6-4: ₹3-2. A may realize ₹3-2 from B.

(*b*) A is the holder of land of the description mentioned in sub-clause (*b*) of clause (5) of Section 2, on which the land-revenue payable is ₹50 and on which the full land-revenue at current rates would be ₹100. The annual value is therefore ₹150, and the rate at one anna per rupee would be ₹9-6. The land is held by a tenant, B, at a rent of ₹150. Then 150 : (200—150) =50 :: ₹9-6: ₹3-2 A may realise ₹ 3-2 from B.

(*c*) A is the holder of one hundred acres of land of the description mentioned in sub-clause (*c*) of clause (5) of Section 2. The annual value of such land is therefore ₹ 200, and the rate at one anna per rupee would be ₹ 12-8. The revenue assessed on the land is ₹ 50. The land is held by a tenant, B, at a rent of ₹ 100. Then ₹200 : (250—100) 150 :: ₹ 12-8 : ₹9-6. A may realize ₹9-6 from B.

(*d*) A is the holder of one hundred acres of land of the description mentioned in sub-clause (*d*) of clause (5) of Section 2. The average rate of incidence per acre of the land-revenue in other permanently-settled land in the same pargana is eight annas. The annual value of such land is therefore ₹250, and the rate at one anna per rupee would be 15-10. The land is held by a tenant, B, at a rent of ₹125. Then ₹250 : (250—125)=125 :: ₹15-10 : ₹7-13. A may realize ₹7-13 from B.

Suits regarding rate cognizable by Courts having cognizance of suits for rent.

18. Suits for the recovery from co-sharers, tenants or others, of any sum on account of a rate imposed on any land under this Regulation, and suits on account of illegal exaction of such rate, or for the settlement of accounts of such rate shall be cognizable by the Courts which under the law for the time being in force have cognizance of suits for rent due on such land, and by no other Courts.

From Major C. W. RAVENSHAW, Secretary to the Chief Commissioner of Coorg, to the Secretary to the Government of India,—No. $\frac{1234}{87\text{-}92}$, dated Bangalore, the 3rd August 1892. [No. 39.]

I am directed to acknowledge receipt of your letter No. 120—Sanitary of the 11th June last, with which you forwarded, for the Chief Commissioner's remarks, certain papers received from the Secretary of State regarding the application of a portion of the proceeds of village cesses to village sanitation.

2. In reply, I am to say that at present there are no village cesses in Coorg, and that the cost of village sanitation is met from Local Funds. There is no difficulty in the matter, so far as Coorg is concerned, as the Local Funds are ample to meet requirements.

From G. R. IRWIN, Esq., Secretary for Berar to the Resident at Hyderabad, to the Secretary to the Government of India,—No. 196, dated Hyderabad Residency, the 14th July 1892. [No. 40]

The question which Miss Florence Nightingale asks in her letter on the 21st March 1892, to the address of the Secretary of State, enclosed in your No. $\frac{5}{121}$ (Sanitary), dated 11th June, is whether, "in accordance with the recommendation contained in the Memorandum (which accompanies the letter), it might not be possible for the local authorities under the existing law to cause sufficient funds to be appropriated to satisfy the minimum requirements of village sanitation." And the recommendation in the Memorandum is "that reasonable sanitary improvements in each village should be regarded as a first charge on the cess raised in that village," but no explanation is given of what is meant by "reasonable sanitary improvements" or what are the "minimum requirements of village sanitation."

2. The cesses at present levied in the Hyderabad Assigned Districts comprise the jaglia and local cess, the town fund assessment, the bazâr cess, and the education cess. In pursuance

of the Berar Rural Boards Law, the net proceeds of all these cesses are paid into the district fund, which is vested in the District Board. The district fund is applicable to the payment amongst other things, of the cost of constructing, improving and maintaining local source of water-supply and of any other works or measures likely to promote the health, comfort, or convenience of the public. These provisions are comprehensive enough to cover the three main requirements of village sanitation, *i.e.*, improvement and protection of the water-supply, cleansing of the village site, and removal of village sweepings to a place appointed for the purpose and the setting apart of a locality to be used for purposes of nature. Therefore, so far as the law is concerned, every District Board is armed with sufficient authority to enable it to devote funds to village sanitation. But the law leaves it to the discretion of the District Board to distribute expenditure from the district fund among the several objects to which it is applicable as the Board pleases; and although power is reserved to the local authorities to intervene and compel a defaulting Board to perform its duties, this power is intended to be used only in exceptional circumstances.

3. The Rural Boards Law has not been in operation in Berar long enough to enable the Resident to express any definite opinion as to the attitude taken up by the several District Boards towards village sanitation. But in Mr. Plowden's opinion the Boards are the instruments through which we must work. Local Officers have been instructed in this sense; and although a Sanitary Board has been established in a great number of villages, the aim is to connect these Village Boards with the District and Taluk Boards, and not to allow them to become independent authorities. The Resident agrees with the opinion expressed in the last paragraph, of the Memorandum to this extent that money is sometimes expended on local improvements which are of less importance than works connected with sanitation, *e.g.*, upon a village *chowri* instead of upon a good well; but the real difficulty is that, as a rule, the fund derived from each village are not sufficient to meet the cost of even rudimentary sanitary improvements. One of the cesses in Berar—the bazâr cess—is levied for a definite purpose, and the amount raised is spent on the village whence it is derived. The Rural Boards Law does, no doubt, enable the proceeds of this cess to be spent on any of the purposes to which the District Fund is applicable, but usage and equity demand that the requirements of the bazâr, for the administration of which the cess is collected, should be first attended to. The surplus is in all cases small, and in many cases almost nothing. If it should be found possible to provide for a sanitary cess in the revised settlement of the land-revenue now in progress, the difficulty of want of funds will be in a great measure overcome. But it is not less important that the money, which may be made available, should be expended in a systematic way in carrying out a definite working plan. And the Resident thinks the expenditure would be more effective if it were concentrated in specific areas or on specific objects, so that each part of the Province could be dealt with in turn, than if it were frittered away in petty sums in innumerable villages.

[No. 41.] From the Government of India, to the Right Honourable the Earl of KIMBERLEY, K.G., Her Majesty's Secretary of State for India,—No. 3, dated Simla, the 30th May 1893.

We have the honour to forward for Your Lordship's information copies of our Orders on the Sanitary Reports of the Local Governments and Administrations named in the margin for the year 1891, and on the Vaccination Reports for 1891-92. Copies of these Reports have already been forwarded to your Lordship direct by Local Governments and Administrations.

PROVINCE.	SANITARY, 1891.	VACCINATION, 1891-92.
	Orders.	Orders.
Madras	No. 241, dated the 5th Oct. 1892	No. 257, dated the 21st Oct. 1892
Bombay	„ 247, „ 13th „ „	„ 237, „ 28th Sept. „
Bengal	„ 280, „ 2nd Dec. „	„ 272, „ 10th Nov. „
North-Western Provinces and Oudh.	„ 258, „ 25th Oct. „	„ 61, „ 23rd May 1893.
Punjab	„ 242, „ 5th „ „	„ 228, „ 20th Sept. 1892.
Central Provinces	„ 208, „ 2nd Sept. „	„ 225, „ 17th „ „
Burma	„ 248, „ 13th Oct. „	„ 191, „ 26th Aug. „
Assam	„ 236, „ 23rd Sept. „	„ 231, „ 21st Sept. „
Coorg (including Vaccination).	„ 178, „ 5th Aug. „	(Included in the Sanitary Report.)
Hyderabad.	„ 221, „ 12th Sept. „	No. 192, dated the 29th Aug. 1892.

2. In our Despatch No. 1 (Sanitary), dated the 13th January 1892, forwarding the Reports for the previous year, we described the steps which had been taken for the constitution

of Sanitary Boards in the different Provinces, and gave a summary of the law under which measures of village sanitation could be carried out in each Province. Details of the working of these Boards during the year under report, and of the principal sanitary measures which have been carried out in municipal or rural areas, are given in the local Reports, and referred to in the Reviews of Local Governments and Administrations and our orders thereon. It is only necessary now to bring the account given in our Despatch of last year up to date, by noticing briefly such changes of importance as have been carried out during the year, either as regards the constitution of Provincial Sanitary Boards or in the matter of special sanitary legislation for towns or village areas.

3. In the Bombay Presidency the Sanitary Engineer, whose appointment was sanctioned in your Despatch* No. 69 (Statistics), dated the 8th October 1891, was appointed shortly after the close of the year under report, and a Sanitary Board for the Presidency has now been constituted on a working basis. There is, therefore, at the present time a Provincial Sanitary Board in existence in every Province, except in the Hyderabad Assigned Districts, where District Sanitary Boards have been created.

*Not printed.

4. In our Despatch of January 1892 we informed your Lordship that no village agencies for the supervision of rural sanitation had been brought into existence in Bengal, and that we proposed to address the Local Government with a view to the formation of Union Committees under the Bengal Local Self-Government Act III of 1885. In the correspondence which ensued, the Lieutenant-Governor expressed himself as altogether averse from creating Union Committees under the Act. The reasons advanced by His Honour induced us to agree with him that the general formation of such Committees throughout the whole area of the Province was at present impracticable or undesirable (to a great extent owing to the difficulty of providing these bodies with sufficient funds), but we were of opinion, especially in view of the fact that the Union Panchayats in Madras, which are similarly constituted, have done good work, that an endeavour should be made to constitute a few Committees experimentally in selected and advanced rural areas in Bengal, before deciding whether the system should or should not be more largely introduced. We have requested the Local Government to consider this suggestion.

5. Several important measures of sanitary legislation were undertaken, or were in progress in the North-Western Provinces and Oudh during the year under the direction of the late Lieutenant-Governor, Sir Auckland Colvin. The local Village Sanitation Bill, designed to effect an improvement in the water-supply and conservancy of the larger villages, and to provide a means of checking the outbreak and spread of serious epidemics or infectious diseases in any district, was under consideration during the year, and has since been passed as Act II of 1892.† Among measures affecting municipal sanitation, the North-Western Provinces and Oudh Water-Works Act, 1891, was passed during the year, and two other measures—one providing for the construction and maintenance of drainage and sewerage works, and the other for the licensing of lodging-houses in Municipalities—were also introduced in the local Legislative Council. The latter has since been passed as the North-Western Provinces and Oudh Lodging Houses Act, 1892.

†*Vide* Appendix C.

In the Punjab, the local Sanitary Board prepared a draft of a Village Sanitation Bill on the lines of the Village Sanitation Act in force in the Central Provinces (Act XIX of 1889)‡ and of that recently passed in the North-Western Provinces and Oudh. The draft has been referred by His Honour the Lieutenant-Governor to local officers and District Boards for their opinion, and will be further considered when their replies have been received. A similar Bill was proposed to the Chief Commissioner of Burma by the Sanitary Board of that Province; but, in view of the recent introduction of the village system in Lower Burma, it was thought advisable to postpone its consideration till the close of the year.

‡*Vide* Appendix E.

6. We forward, for your Lordship's information, as connected with the subject of sanitation, a copy of a Circular No. $\frac{8 \text{ Sanitary}}{262-270}$, dated the 8th November 1892, which we have addressed to Local Governments and Administrations, recommending the system which prevails in the Madras Presidency of executing important sanitary works through specially appointed temporary Assistant Engineers working directly in subordination to the Sanitary Engineer and the Sanitary Board.

[No. 42.] From the Government of India, to the Right Honourable the Earl of KIMBERLEY, K.G., Her Majesty's Secretary of State for India,—No. 6, dated Calcutta, the 28th February 1894.

We have the honour to forward, for your Lordship's information, copies of our orders* on the Sanitary Reports of Local Governments and Administrations for the year 1892 and on the Vaccination Reports for the year 1892-93, as mentioned in the margin. Copies of these Reports have already been forwarded to your Lordship direct by Local Governments and Administrations.

*Not printed.

Provinces.	Sanitary, 1893. Orders.	Vaccination, 1892-93.
Madras . . .	No. 196, dated 11th October 1893.	No. 233, dated 8th November 1893.
Bombay . . .	No. 209, dated 26th October 1893.	No. 239, dated 10th November 1893.
Bengal . . .	No. 201, dated 19th October 1893.	No. 740, dated 27th November 1893.
North-Western Provinces and Oudh.	No. 217, dated 31st October 1893.	No. 234, dated 8th November 1893.
Punjab . . .	No. 277, dated 14th December 1893.	No. 214, dated 30th October 1893.
Central Provinces . .	No. 187, dated 2nd October 1893.	No. 198, dated 13th October 1893.
Burma . . .	No. 206, dated 23rd October 1893.	No. 200, dated 16th October 1893.
Assam . . .	No. 207, dated 24th October 1893.	No. 223, dated 4th November 1893.
Coorg (including vaccination)	No. 185, dated 28th September 1893.	(Included in the Sanitary Report.)
Hyderabad . .	No. 186, dated 29th September 1893.	No. 191, dated 5th October 1893.

2. In our Despatch No. 3 (Sanitary), dated the 30th May 1893, we brought up to date the account we had previously given of the changes of importance which had been carried out as regards the constitution of Provincial Sanitary Boards and in the matter of special sanitary legislation for towns or village areas. During the year now under consideration no further change took place in the constitution of Provincial Sanitary Boards. The question of reconstituting the Board of the North-Western Provinces and Oudh was under discussion in 1892, but it has not been altered. As regards the appointment of Sanitary Engineers to these Boards, concerning which your Lordship, in paragraph 3 of your Despatch No. 13 (Statistics), dated the 17th August 1893, asked to be informed, we beg to refer to the Despatches of the Secretary of State marginally noted, in which Special Sanitary Engineers were sanctioned for Madras, Bombay, Bengal, and the North-Western Provinces and Oudh. In our Financial Despatch† No. 42 of this date, we have submitted a proposal for improving the status of the appointment of the Sanitary Engineer in Bengal. The proposal to appoint a Sanitary Engineer for Lower Burma has been abandoned at present for the reasons reported in our Despatch No. 7 (Sanitary), dated the 11th October 1893 The smaller Provinces, though as yet without Sanitary Engineers, are watching the results of the experiments in sanitary administration which are being made by the larger Local Governments.

No. 69 (Statistics), dated the 26th September 1889.
†Not printed. No. 16 (Statistics), dated the 13th February 1890.
No. 103 (Revenue), dated the 27th October 1890.
No. 69 (Statistics), dated the 8th October 1891.
No. 9 P. W., dated the 16th March 1893.

3. As regards special legislation for the sanitary improvement of towns and villages, measures connected with this subject were before the local Legislative Councils of Bengal and the North-Western Provinces and Oudh. In Bengal, provisions were introduced into the Municipal Act Amendment Bill to give effect to the recommendations of a Conference held at Belvedere under the presidency of Sir Charles Elliott with the object of introducing a system of improved water-supply and drainage; this Bill‡ has been much discussed, and is still under the consideration of the Council. In the North-Western Provinces and Oudh, the Bill§ for the maintenance of drainage and sewerage works in towns was subjected to public criticism; the Select Committee of the Council appointed to examine and amend the Bill have lately submitted their report.

‡*Vide* Appendix B.
§*Vide* Appendix D.

During the year 1892, the question of facilitating the construction of drainage works in rural tracts of country for improving the local sanitary conditions was brought forward by the Government of Bengal, and, as intimated in our Despatch No. 4 (Sanitary), dated the 7th instant||, we have just sanctioned the introduction of a Bill‡ for this purpose in the Bengal Legislative Council.

||Not printed. *Vide* ‡Appendix B.

4. In our Despatch of the 30th May 1893, above mentioned, we informed your Lordship that we had requested the Bengal Government to consider the question of forming a few village unions under the Bengal Local Self-Government Act, III of 1885, in order to test the system before deciding whether to abandon it or to extend it generally in that Province. In the Resolution of the Local Government reviewing the Reports on the working of the District Boards in Bengal during the year 1892-93, it was stated that this question was under the consideration of His Honour the Lieutenant-Governor, and we have since learnt that arrangements are being made for constituting Unions in several districts.

5. We take this opportunity to forward, herewith, a copy of our general orders (marginally noted), to Local Governments and Administrations, upon the principal suggestions which have been made from time to time by the Army Sanitary Commission in their valuable Memoranda on the Provincial Sanitary Reports, and on the Reports of our Sanitary Commissioner. Your Lordship will observe that we have given consideration to all the recommendations of the Commission, and that we have adopted nearly all of them. The effect of the orders passed will not in all cases be fully perceptible for some time, but we trust that they will eventually result in considerable improvement in sanitation in India, and in the method of reporting upon it.

1. Home Department Circular letter to Local Governments and Administrations, No. $\frac{2\ \text{Sanitary}}{35-44}$, dated the 24th February 1892.

2. Home Department Circular letter to Local Governments and Administrations (except Madras), No. $\frac{8\ \text{Sanitary}}{262-270}$, dated the 8th November 1892.

3. Home Department Circular letter to Local Governments and Administrations, No. $\frac{3\ \text{Sanitary}}{87-96}$, dated the 16th June 1893.

4. Home Department Resolution No. $\frac{10\ \text{Sanitary}}{282-294}$, dated the 23rd December 1893.

5. Home Department Circular letter to Local Governments and Administrations, No. $\frac{1\ \text{Sanitary}}{7-16}$, dated the 13th January 1894.

6. Home Department letter to the Government of Bengal, No. 42 (Sanitary), dated the 8th February 1894.

7. Home Department Circular letter to Local Governments and Administrations (except Bengal), No. 43—51 (Sanitary), dated the 8th February 1894.

We also forward copies of our Home Secretary's Circular letter to Local Governments and Administrations, No. $\frac{5\ \text{Sanitary}}{148-157}$, dated the 25th August 1893, containing instructions to District and Medical Officers to be observed in investigating and reporting on the origin of epidemic disease in particular parts of the country, and of our Resolution* No. $\frac{9\ \text{Sanitary}}{266-27}$, dated the 13th December 1893, on the subject of the outbreak of cholera among pilgrims at, or returning from, great religious and other gatherings.

*Not printed.

From the Government of India to the Right Honourable H. H. FOWLER, Her Majesty's Secretary of State for India,—No. 8, dated Calcutta, the 28th March 1894. [No. 43.]

We have the honour to reply to Lord Cross's Despatch No. 22 (Statistics), dated the 14th April 1892, with which was forwarded, for our consideration and for any remarks we might have to make, a copy of a letter from Miss Florence Nightingale, with enclosures, relative to the application of village cesses to the purposes of sanitation.

2. Miss Nightingale enclosed a copy of a Memorandum signed by certain Members of the Indian Committee of the last International Congress of Hygiene and Demography, in which the following propositions were stated, *viz.*:—(1) that the insanitary condition of the rural villages in India is a very serious evil; (2) that active measures are required to obviate the existing injury to public health; (3) that, as regards villages in the Bombay Presidency, funds are raised by village cesses for works of local public utility, including sanitary improvements, but the amount spent in actual cleansing operations in the villages is very small indeed compared to the amount raised by the village cesses; and (4) that the removal of the present sanitary evils in the rural villages is the first necessity as regards those villages, and reasonable sanitary improvements in each village should be regarded as a first charge on the cess raised in that village, the claims for any general purposes—such as good local communications—being postponed until the minimum of sanitation has been completed, *i.e.*, while typhoidal or choleraic disease is still prevalent.

Miss Nightingale enquired whether, in accordance with the recommendations contained in the Memorandum, it might not be possible for the local authorities under the existing law to cause sufficient funds to be appropriated, to satisfy the minimum requirements of village sanitation. She quoted the opinion of the Poona Sarvajanik Sabha to the effect that the Bombay Village Sanitation Act, 1889, had failed to produce the desired results, because the Act did not reserve a definite portion of the village cesses to meet the expenses of sanitation—the rural population being too poor to be further taxed; and she suggested that the village organizations should be primarily vested with the administration of the funds raised by village cesses for village sanitation.

3. With his Despatch No. 4 (Statistics), dated the 14th April 1892, Lord Cross also forwarded, direct to the Government of Bombay, a copy of Miss Nightingale's letter, with enclosures, to which that Government replied in their Despatch No. 22, dated the 2nd September 1892. In the meanwhile we consulted Local Governments and Administrations as to the application to other Provinces of the suggestions made in the correspondence, and we now enclose a copy of the replies which we have received.

4. The Government of Bombay have pointed out that sanitation was not originally one of the objects of the local cesses raised in that Presidency; and it will be observed, as regards other Provinces, where different forms of local taxation obtain, that nowhere was it in former time the custom in this country to expend such cesses on village sanitation, and that no funds which have been intended by law for this object have been diverted to other more general local purposes. Moreover, we agree in the opinion expressed in the Despatch of the Government of Bombay, and generally by the local authorities throughout the Empire, that village sanitation should

not, in the existing circumstances, be a first charge upon local or village cesses. We consider for the reasons which we shall give, that roads, schools, postal facilities and dispensaries must continue to be held to be of primary importance.

5. We are convinced that village sanitation in India is a matter which requires to be dealt with very great caution, and that the habits and prejudices of the people must be most carefully considered in taking action to improve it. The great majority of the inhabitants in the interior of the districts are not sufficiently educated to be expected to relinquish immemorial practices, which, though opposed to modern sanitary principles, do not seem to them to be objectionable. The people are, however, rapidly growing in the appreciation of the benefits of good communications, of elementary education, and of medical relief, which appear to them to be much more desirable than sanitation. Great and universal dissatisfaction would unquestionably be produced by the withdrawal from these objects of the local funds which are now spent on them, in order to press measures of sanitary reform among an unwilling and conservative people. For this reason, among others, we are entirely opposed to general schemes for the improvement of village sanitation, such as that put forward, which are framed without due consideration of the conditions obtaining in this country and the sentiments of the people.

6. It is pointed out by several of the authorities consulted that, if the local roads, schools, posts and hospitals were entirely neglected and the funds now spent on them made available for expenditure in the villages wholly on cleansing operations, the amount which could be spent in each village would be too trivial to make any appreciable impression upon the insanitary conditions; whilst to place these sums in the hands of the ignorant villagers, would lead to waste, and would thus prevent the chance of success of any sanitary schemes that might be introduced. There is force in these objections; but, without binding ourselves to the statement that the ordinary village organizations, where they exist, cannot at the present time be turned to good account for purposes of sanitary improvement of a simple kind, we have no doubt that much is not to be expected of them, until education has induced, among the general population, some desire for more healthy habits, and some knowledge of the true principles which should be followed. In all primary schools an endeavour is made in this direction by requiring the laws of health to be studied in an elementary form; and in the process of time it may be hoped that some effect will thus be produced.

7. To say, as is said in the Memorandum, that the present insanitary conditions of the villages are undermining the health of the rural population, seems to us to be using the language of exaggeration. These conditions, as they at present exist, are probably better than those which have existed for many centuries; and it appears to us that the general increase of the population, which has been demonstrated by several successive censuses, sufficiently shows that much has already been done to remove those natural checks (among which disease held a chief place) which, till recent times, operated as a hindrance to its growth.

8. We have from time to time informed the Secretary of State of the progress of sanitary improvement in this country. In the Home Department Resolution* dated the 27th July 1888, a copy of which was forwarded with the Despatch No. 11 (Sanitary), dated the 11th August 1888, from Lord Dufferin's Government, the position of affairs and the views of the Government of India upon the subject were set forth at length, and our Despatches, ending with No. 6 (Sanitary), dated the 28th ultimo,† forwarding copies of the orders of the Government of India upon the Annual Sanitary Reports of Local Governments and Administrations, have brought the accounts previously given regularly up to date. In our opinion the provision of a good water-supply is the first essential of sanitary improvement, in this country, and it is almost the only one which at present meets with general appreciation from the people; in this matter Local Governments and Administrations are generally making considerable advances, and several special Acts have been passed to facilitate further improvements. The drainage of large water-logged tracts, to which we also attach great importances is, so far as financial considerations allow, being arranged under the skilled supervision of the Provincial Sanitary Boards, and a measure of legislation with this object is at present engaging the attention of the Council of the Lieutenant-Governor of Bengal. Village conservancy of a simple nature has been introduced in some parts of the country, notably in the Central Provinces; but there are great difficulties in this branch of the subject, the chief of which is that of securing proper control and supervision, and the prevention of oppressive action.

*Page 1.

†Page 128.

9. We are conscious, nevertheless, that very much remains to be done. Though all Local Governments and Administrations are paying attention to the subject, and the effectiveness of their attention will increase with time, we think that in some Provinces more might be done without delay. Sanitation in its simplest form of a pure water-supply, and simple latrine arrangements should, it seems to us, be regarded as having, to some extent, a claim on Provincial revenues, and we intend to press this claim upon Local Governments and Administrations as opportunity offers. In the meantime our views are generally those expressed by the Government of Madras, *viz.*, that all that can be done is to await the development of local sanitation in India upon existing lines.

From the Right Honourable H. H. FOWLER, Her Majesty's Secretary of State for India, to His Excellency the Right Honourable the Governor General of India in Council,—No. 61 (Revenue), dated India Office, London, the 10th May 1894. [No. 44.]

I have considered the interesting papers received with your Excellency's letter No. 8, dated the 28th March 1894, on the subject of rural sanitary improvement in India.

2. I am glad to find that in most provinces attention is being given to this important subject, and that some gradual advance is being made. I recognize that lack of funds obstructs improvements, which, for the most part, must come from, and be carried out by, the people themselves. And I see no reason for dissenting from your conclusion that the improvement of rural sanitation in India can best be attained by patient and gradual working on existing lines. I notice that the procedure adopted in the several provinces is not uniform, and no doubt each province will profit by the experience of its neighbours, so far as that experience may be applicable to its own special needs.

3. I forward copy of a letter, which I have caused to be addressed to Miss Nightingale on the subject of your Report.

From SIR ARTHUR GODLEY, K.C.B., Under Secretary of State, for India, to Miss NIGHTINGALE,—No. R. & S. 566, dated India Office, London, the 9th May 1894.

A reply has now been received from the Government of India to Lord Cross's Despatch which forwarded to the Viceroy your letter, dated the 21st March 1892, with a Memorandum drawn up by ten Members of the London International Congress of London. Mr. Fowler desires me to send you a copy of the Reports received from India for your perusal.

Letter from the Government of India, dated the 28th March 1894, with all enclosures.

The Government of India and the Local Governments are, for the most part, agreed that some progress has been made towards improving the sanitary condition of Indian villages, but much remains to be done. The people themselves fully appreciate efforts for improving the supply of drinking water, and for draining water-logged tracts. But at present they do not go beyond this; and they would much dislike anyscheme for the general taxation of villages for sanitary purposes. The people, and their respresentatives who are charged with the management of local funds, would not approve of sanitation being made a first and chief charge upon those funds.

Meanwhile, in Madras, through the agency of village unions, which are increasing in number yearly; in Bombay, the Central Provinces and the North-Western Provinces under the recently enacted Village Sanitation Acts;*, in Bengal, under the Rural Drainage Bill, in and all parts of India by administrative influence and pressure, villagers are being induced to carry out simple measures of sanitary improvement, and especially to extend and safeguard the sources for supply of drinking water. Funds for these undertakings are often inadequate, still, money is, to some extent, being made available from local funds and from the general treasury.

* *Vide* Appendices A, C & E.

The Governments of India are unwilling to press the local bodies and the villagers too far and too rapidly in these matters, and they believe that the gradual development of local sanitation on existing lines should be awaited. They demur to the view taken in the Memorandum recorded by the ten Members of the International Congress, that "the insanitary conditions of Indian villages are gradually undermining the health of the rural population."

Mr. Fowler, as at present advised, is disposed to accept the view taken by the Indian Governments; he approves of their determination to press gradually for further sanitary improvement; but he is not prepared to prescribe radical change in the lines on which they are now acting. At the same time he believes that India will benefit by the renewed attention, which your action has caused to be given to the important subject of rural sanitary reform.

From H. LUSON, Esq., Under Secretary to the Government of India, to the Chief Secretaries of the Governments of Madras and Bombay, Secretary to the Government of Bengal, Muncipal (Medical) Department, Chief Secretaries to the Governments of the North-Western Provinces and Oudh and the Punjab, the Chief Commissioners of the Central Provinces, Burma, Assam, Coorg, and the Resident at Hyderabad,—No. 4 $\frac{\text{Sanitary}}{138\text{-}147}$, dated Simla, the 13th July 1894. [No. 45.]

With reference to the correspondence ending with your letter No. *, I am directed to forward, for the information of $\frac{\text{His Excellency the Governor in Council}}{\text{H. H. the Lieutenant-Governor (and C. C.),}}$ a copy of the correspondence with Her Majesty's Secretary of State, marginally noted,† on the subject of rural sanitary improvement in India.

* 1947-L., dated 25th August 1892.
3090, dated 2nd September 1892.
578-T.-M, dated 29th June 1892.
403, dated 18th August 1892.
2155, dated 23rd December 1893.
4473, dated 4th July 1892.
527—3Z.-13, dated 21st November 1892.
6624-G., dated 30th July 1892
1234—87-92, dated 3rd August 1892.
196, dated 14th July 1892.

† Despatch to Her Majesty's Secretary of State, No. 8 (Sanitary), dated 28th March 1894.
Despatch from Her Majesty's Secretary of State, No. 61 (Revenue), dated 10th May 1894.

[No. 46.] From the Right Honourable HENRY H. FOWLER, Esq., Her Majesty's Secretary of State for India, to His Excellency the Right Honourable the Governor General of India, in Council, No. 134 (Revenue), dated India Office, London, the 20th September 1894.

With reference to previous correspondence, terminating with the letter of Your Excellency's Government in the Home (Sanitary) Department, No. 8, dated 28th March last, I forward herewith copy of a further communication from Miss Florence Nightingale,* respecting village sanitation in India, and of the reply which I have caused to be sent thereto.

* Dated 18th August 1894. Dated 13th September 1894.

2. I shall be glad to receive from Your Excellency copies of such further papers on this subject as are indicated in Miss Florence Nightingale's letter, and also to learn whether, in your opinion, it would be advisable to present the papers to Parliament.

ENCLOSURES.

No. 1.

Demi-official from MISS FLORENCE NIGHTINGALE, to SIR ARTHUR GODLEY, Under-Secretary of State for India, dated 10, South Street, Park Lane, W., 18th August 1894.

Pray let me say how extremely grateful to you I am for your letter of 9th May (R and S. 556), and for its enclosures, a letter from the Government of India of 28th March, with copies of Reports received from India.

The Reports are most interesting, if only as showing the different ways of managing its affairs in each province of India (though are not the villages pretty nearly alike all over India ?).

But there is much more in the Reports than this,—some things that are encouraging, *e. g.*,—

Sir Charles Elliott (Bengal) expresses sympathy and desires to devise means for enlisting the co-operation of the people themselves. There was to be a Conference at Belvedere of engineering and sanitary experts with representative natives.

Is it not a fact that in all villages conservancy, and that in many villages the preservation of purity of the water-supply, might be carried out by the villagers themselves, without any reference to the cess levied for purposes affecting the districts, such as roads are ?

Sir Dennis Fitzpatrick (Punjab) has taken the advice of the Sanitary Board, now established in every province, and issued orders for a certain sum to be applied annually for the protection of the drinking water in villages. It is admitted that the real scourge of the Punjab is malarial fever. But drainage of malarial districts would seem to be a matter rather for district, or even provincial, administration.

Similarly, in Burma, the Chief Commissioner appears to have consulted the experts (the Sanitary Board), and he has given the opinions recorded by the Board which are valuable. It will be seen that the Board in some measure supports our contention.

North-Western Provinces and Oudh.—It seems to be contended that all conservancy should be effected by the village itself, at its own cost, the cesses having been imposed for other purposes.

Revenues of District Boards are specifically stated to be applicable to the construction and repair of public wells, tanks, and water-works, and the supply of water from them or from other sources.

Central Provinces.—The most satisfactory Report is that of the Central Provinces, where, without being romantic, we may say that the administration seems careful and sympathetic.

In the Central Provinces they seem to have a Village Sanitation Act,* which gives the first charge on the assessments to conservancy and water-supply. Also the Central Provinces Local Self-Government Act provides for the expenditure of a portion of the district fund upon village water-supply, while the Chief Commissioner is enforcing a scheme for contributing annually ₹50,000 from district funds and provincial revenues to the water-supply and sanitation of rural villages.

* *Vide* Appendix E.

Our earnest thanks are due to both the India Office and the Government of India and its provinces, while recognizing their efforts in the sanitary cause.

But I am afraid that you will think that "la reconnaissance n'est qu'un vif sentiment des bienfaits futur." And the "bienfaits futur" for which I am humbly hoping are :

(1) To ask (from Bengal) what was the outcome of the Conference at Belvedere of engineering and sanitary experts with representative natives, intended to be held on 18th July 1892, and who these representative natives were ?

(2) To ask (from Punjab) for the answer to the enquiries which it was said were being made in December 1893, as to connection between a water-logged soil and malarial fever. It would be interesting to see the Reports, or to hear what results have been obtained.

(3) Might I ask to have copies of the opinions of the sanitary authorities in other provinces as well as Burma?

(4) Would the India Office give the Reports now so kindly lent to me to the Press? This would stimulate interest in a very important subject, and might induce other experts to make suggestions and give the benefit of their experience.

Recurring again to your kind letter, I am very glad that Mr. Fowler thinks the inquiry has done good.

Also, you are so good as to mention the Village Unions in Madras, Bombay, Central Provinces, and North-West Provinces. Might I hear more?

Sir C. Elliott, it is said, objects to having them in Bengal, because of the immense amount of supervision which would be thereby entailed.

Lastly, even in the letter from the Government of India, it is admitted that something more may be done without delay, and it is stated that the claims of sanitation upon provincial revenues will be pressed.

From SIR HORACE WALPOLE, Under Secretary of State for India, to Miss FLORENCE NIGHTINGALE,—No. 1354 R. and S., dated India Office, London, the 13th September 1894.

I am desired by Mr. Secretary Fowler to acknowledge the receipt of your letter of the 18th ultimo, copy of which will be forwarded to the Government of India, with a request that steps may be taken to supply the further information which you require relative to village sanitation in India. The opportunity will also be taken to enquire whether, with the view of meeting your wish that public attention in this country should be directed to this matter, papers upon the subject might not be presented to Parliament.

From the Government of India, to the Right Honourable H. H. FOWLER, Her Majesty's Secretary of State for India,—No. 15, dated Calcutta, the 12th December 1894. [No. 47.]

We have the honour to acknowledge the receipt of your Revenue Despatch No. 134, dated the 20th September 1894, in which you request to be furnished with certain further papers indicated by Miss Florence Nightingale on the subject of village sanitation in India, and inquire whether in our opinion it would be advisable to present the papers to Parliament.

2. Miss Florence Nightingale enquires:—

(*a*) what was the outcome of the Conference to be held in July 1892 at Belvedere, of engineering and sanitary experts with representative natives of Bengal; and who were these representative natives;

(*b*) what was the result of the enquiries which were being made in the Punjab in December 1893 into the question as to the connection existing between a water-logged soil and malarial fever; and

(*c*) what progress has been made in the organization of village unions.

3. The proceedings of the Belvedere Conference, and connected correspondence, were forwarded to Lord Kimberley's address with our Sanitary Despatch No. 4, dated the 7th February 1894.* A reference to the Bill† introduced into the Legislative Council of the Lieutenant-Governor of Bengal, which accompanied that Despatch, and to Bengal Act IV of 1894, which was forwarded with His Excellency the Governor-General's Despatch No. 22 (Legislative), dated 14th August 1894,* will show that the principles accepted by the Conference have received much attention.

*Not printed.

†*Vide* Appendix B.

The subject to which Miss Florence Nightingale's second question relates is referred to in paragraph 11 of the Resolution recorded by the Lieutenant-Governor of the Punjab on the Report on the Sanitary Administration of that Province for the year 1893. We have drawn the attention of the Punjab Government to the necessity for the prosecution of drainage schemes for water-logged tracts, where fever has been specially fatal during recent years. A copy of our letter § is enclosed.

§ Home Department No. 258 (Sanitary), dated the 22nd September 1894 (*vide* paragraph 6).

§Not printed.

We explained in our Despatches marginally noted that the question of forming Village Unions experimentally in selectedand advanced rural areas in Bengal was being considered. From the Resolution recorded by the Government of Bengal No. 3600-L. S. G., dated the 1st September 1894 (a copy of which is enclosed), it will be seen that

Home Department No. 3 (Sanitary), dated the 30th May 1893 (paragraph 4).
Home Department No. 6 (Sanitary), dated the 28th February 1894 (paragraph 4).

Pages 126 and 128 of these Selections.

the Lieutenant-Governor has taken steps for the establishment of Union Committees in localities which offer the best conditions for their success.

The Reports and Resolutions for the different Provinces on the working of the Local Boards for the year 1892-93, which have already been forwarded to you in accordance with paragraph 7 of the Secretary of State's Despatch No. 114 (Statistics and Commerce), dated the 11th September 1879, contain the latest information upon the subject of Village Unions in other parts of India.

4. Miss Nightingale has also asked to have copies of the opinions of the Sanitary authorities in all the Provinces. Such opinions are already contained in some of the Annual Sanitary Reports, and we are requesting the Local Governments and Administrations to arrange that, in future, important declarations of opinion by the Sanitary Boards upon the subject of village sanitation, may be invariably mentioned in these Reports.

5. We see no objection to the papers on the subject being presented to Parliament.

[No. 48.] From H. LUSON, Esq., Under Secretary to the Government of India, to the Chief Secretaries to the Governments of Madras and Bombay, to the Secretaries to the Government of Bengal, Municipal Department, North-Western Provinces and Oudh, to the Chief Secretary to the Government of the Punjab, to the Chief Commissioners of the Central Provinces, Burma, Assam, and Coorg, and to the Resident at Hyderabad,—Nos. $\frac{11}{340\text{-}349}$, dated Calcutta, the 21st December 1894.

With reference to the correspondence ending with your letter , * I am directed to request that, with the permission of His Excellency the Governor in Council / His Honour the Lieut.-Governor (and Chief Commissioner) instructions may be issued to the Sanitary Commissioner of the Madras / Bombay Presidency / Bengal, etc., to mention in his Annual Sanitary Reports, in future, any important declarations of opinion on the part of Sanitary Boards, in connection with matters relating to village sanitation in the Madras / Bombay Presidency. / Bengal, etc.

* Madras . . .	No. 1947 L. (Misc.), dated the 25th August 1892.
Bombay . . .	No. 3090, dated the 2nd September 1892.
Bengal . . .	No. 578 $\frac{T}{M}$, dated the 29th June 1892.
North-Western Provinces and Oudh.	No. 403, dated the 18th August 1892.
Punjab . . .	No. 155, dated the 23rd December 1893.
Central Provinces .	No. 4473, dated the 4th July 1892.
Burma . . .	No. 527—3 L.-13, dated the 21st November 1892.
Assam . . .	No. 6624 G., dated the 30th July 1892.
Coorg . . .	No. $\frac{1234}{87\text{-}92}$, dated the 3rd August 1892.
Hyderabad . .	No. 196, dated the 14th July 1892.

[No. 49.] From the Government of India, to the Right Hon'ble H. H. FOWLER, M.P., Her Majesty's Secretary of State for India,—No 3, dated Calcutta, the 6th February 1895.

We have the honour to forward, for your information, copies of our orders, as marginally noted, on the Sanitary Reports of Local Governments and Administrations for the year 1893, and on the Vaccination Reports for the year 1893-94. Copies of these Reports have already been forwarded to you direct by Local Governments and Administrations.

Provinces.	Sanitary, 1893. Orders.	Vaccination, 1893-94 Orders.
Madras . . .	No. 266, dated the 29th September 1894.	No 293, dated the 16th October 1894.
Bombay . . .	No 311, dated the 31st October 1894.	No. 316, dated the 20th November 1894.
Bengal . . .	No. 257, dated the 22nd September 1894.	No. 310, dated the 31st October 1894.
North-Western Provinces and Oudh.	No. 22, dated the 16th January 1895.	No orders.
Punjab . . .	No. 258, dated the 22nd September 1894.	No. 299, dated the 23rd October 1894.
Central Provinces .	No. 302, dated the 24th October 1894.	No. 301, dated the 24th October 1894.
Burma . . .	No. 264, dated the 29th September 1894.	No. 298, dated the 18th October 1894.
Assam . . .	No. 295, dated the 16th October 1894.	No. 294, dated the 16th October 1894.
Coorg . . .	No. 235, dated the 6th September 1894.	(Included in the Sanitary Report.)
Hyderabad . .	No. 277, dated the 5th October 1894.	No. 234, dated the 5th September 1894.

2. In the orders above quoted, we have specially drawn the attention of Local Governments and Administrations to the more prominent suggestions and recommendations of the Army Sanitary Commission made in their Memoranda on the Reports of the Provincial Sanitary Commissioners for the year 1892, to which you invited our attention in paragraph 2 of your Statistical Despatch No. 1, dated the 19th July 1894. In paragraph 3 of that Despatch, in connection with the increase of mortality in the Punjab, you referred to the necessity of pressing forward the prosecution of drainage schemes for water-logged tracts. The action taken by us in this

matter was reported to you in our Sanitary Despatch No. 15, dated the 12th December 1894, in which we also referred to the progress which was being made in connection with village sanitation in India.

We enclose a copy of the marginally noted letter from the Government of Bengal, which reports the orders passed by the Lieutenant-Governor to give effect to the suggestion which was made by the Army Sanitary Commission with a view to obtaining more reliable records of the amount of success attending the operations of vaccinators in that Province.

No. 28-S., dated the 5th January 1895, and enclosure.* *Not printed.

3. During the present year certain changes have been made in the constitution of the Sanitary Boards in Madras and Bengal. In the former Province the Sanitary Board has been strengthened by the addition, as President, of the Chief Engineer of the Public Works Department. The rules which regulate the working of the Board have also been revised. In Bengal the title of the Engineer to the Sanitary Board has been changed to that of Sanitary Engineer, Bengal. This Officer has been appointed *ex-officio* Secretary to the Board, and his powers and duties under the rules have been more clearly defined. Copies of the Proceedings of the Governments of Madras and Bengal in this connection are enclosed.

From the Government of Madras, No. 2381 L. (Local and Municipal), dated the 16th November 1894, and enclosures †
Resolution recorded by the Government of Bengal, No. 3456-S., dated the 21st August 1894, with rules attached.† †Not printed.

We also transmit, for your information, a copy of a Resolution, which we have issued to Local Governments and Administrations on the subject of the registration of vital statistics. We have requested each Local Government and Administration to consider, carefully, its existing machinery for the collection and collation of these statistics, and to report what improvements are possible, and how it is proposed to give effect to them. We trust that this will lead to greater improvements in the registration of births and deaths in those Provinces in which registration is still unsatisfactory.

No. 2 Sanitary 106—117, dated the 18th June 1894.‡ ‡Not printed.

From J. P. HEWETT, Esq., C.I.E., Officiating Secretary to the Government of India, to the Chief Secretaries to the Governments of Madras and Bombay, to the Secretary to the Government, of Bengal, Municipal Department, the Chief Secretaries to the Governments of the North-Western Provinces and Oudh and the Punjab, the Chief Commissioners of the Central Provinces, Burma, Assam, Coorg, and the Resident at Hyderabad,—No. $\frac{4}{83-92}$, dated Calcutta, the 8th March 1895. [No. 50.]

In a Circular letter No. * , dated the 28th August 1893, the Government of India suggested the issue of instructions to all Civil and Medical Officers for Enquiries of a practical nature into outbreaks of cholera and other epidemic diseases. Stress was laid upon the necessity for the immediate and thorough investigation on the spot of outbreaks of such diseases, and it was suggested that Civil Medical Officers should be directed to keep, ready prepared, and to distribute beforehand, a printed form of instructions (as prescribed) in the vernacular, for the use of all persons whose duty it would be to report the occurrence of cases of cholera.

		15 Sanitary
* Madras	No.	148
Bombay	„	149
Bengal	„	150
North-Western Provinces and Oudh	„	151
Punjab	„	152
Central Provinces	„	153
Burma	„	154
Assam	„	155
Coorg	„	156
Hyderabad	„	157

2. With reference to this subject, and in connection with the question of improving village conservancy and rural sanitation in India, it has been suggested to the Government of India that District and Medical Officers would derive much assistance in acquiring a practical knowledge of the local sanitary conditions of their districts, if a permanent record containing such information as can be furnished of the sanitary history of each locality were kept up. An attempt has been made to indicate in the questions given in the annexed paper the kind of information which is required, and this information might be embodied in a record to be called the "Village Sanitary Inspection Book" by some literate resident of the village, either the headman, village accountant, or any other intelligent person. It has further been suggested that these questions might be printed on each page of the book, both in English and the vernacular of the district, a blank page being inserted after each set of questions for any subsequent remarks which might be made by Officers of the district staff, including Tahsildars, Gazetted Officers of the Police and Public Works Department and Officials of the Sanitary and Medical Departments visiting the village on tour. The book should ordinarily be kept in the village as a local record, and sent at the end of every quarter to the Civil Surgeon, in order that the information may be abstracted for permanent record in his office.

3. In some Provinces a "Village Note-book", of a similar nature, is already maintained for revenue purposes, and the adoption of such a note-book for information regarding sanitary matters would, in these provinces, be a matter of no difficulty. It appears also to the Governor General in Council that the suggestion could be easily carried out in other Provinces, and His Excellency in Council therefore desires that the experiment of introducing it should be tried. The Governor General in Council will leave it to Local Governments and Administrations to make any additions or alterations which may be considered necessary or desirable in the questions to be put.

4. The Governor General in Council desires that the system above described should be confined for the present to selected villages. It seems to His Excellency in Council essential, for the proper working of the scheme, that villages and areas selected should be grouped and marked off in the District or Thana maps. They are already so grouped for the purpose of furnishing information regarding cholera, but the existing groups will probably be found to be too large for the present purpose, and it may be desirable to reduce them to 10 or 15 villages at most. The system might, at first, be introduced in the chief village of each small group, and gradually extended so as eventually to embrace all the villages in the group.

5. I am to request that the progress made in the preparation and maintenance of such a village sanitary record in $\frac{\text{the Madras Presidency}}{\text{the Bombay Presidency}}$ Bengal, etc., etc., may be duly noticed in the Annual Sanitary Reports.

Copy forwarded to the Surgeon-General with the Government of India for information, in continuation of endorsement No. 159, dated the 28th August 1893.

By order,
H. LUSON,
Under Secretary to the Government of India.

The points to be dwelt on briefly in the "Village Sanitary Inspection Book" should include the following:—

1 Name of village and pargana, with the name of the person by whom information was supplied.

2 Position with regard to main roads, railways, pilgrim routes, etc.

3 Conformation of site and locality.

4 Character of the soil and its tendency to retain moisture or otherwise; state of natural drainage.

Is there any attempt at artificial drainage?

Is there any obstruction to drainage, by roads, railways, embankments or other works on drainage, or by the silting up of rivers or *khals?*

Spring-level of village lands in hot, dry and monsoon months.

Position of burial grounds and cremation ghâts, as regards villages and streams.

5 Area, number of houses, their construction, arrangement in groups or streets, sanitary condition of immediate surroundings of each house or group of houses; site crowding. Are the dwellings generally crowded or otherwise?

6 Population, its principal castes; trades and occupations of the inhabitants.

Particulars as to migration.

7 Food substances, their source of supply and degree of abundance.

8 Water-supply: principal sources.

If from wells:—

How many are there? What are their respective depths, and what is the distance between surface of ground and the surface of water in the hot weather? How are they protected from surface impurities? Are they of masonry or not? Are any set aside for particular castes?

If from tanks:—

How many are there? What are their respective sizes? Are they protected from fouling by men, as by washing, etc., and by cattle? Are any set apart for the use of particular castes?

If from rivers or streams:—

Is the stream polluted from any cause such as impure surface drainage, or trades and manufactures, such as tanning, dyeing, etc., before it reaches the village, or during the passage by the village?

The neighbourhood of burial or burning places to drinking water should be noted.

Are the wells or tanks set apart for drinking purposes periodically cleaned? If so, at what intervals? The date on which each cleaning actually takes place should be noted.

9 Is any place, or are any places, set aside for answering the calls of nature?

If so, what is the position of such a place or places with regard to—

the prevailing winds, natural drainage of the country, the wells and tanks and the dwellings of the inhabitants? Is the site systematically cultivated? Is any system of conservancy carried out? If so, describe it. How is house-refuse disposed of?

10 Are there many cattle or domestic animals kept in the village? How are they stalled or penned? Is manure stored in the village in any quantity? If stored outside the village, where is it kept? Is any place set apart for the slaughter of animals by butchers, or for chamars to skin or cut up animals; and, if so, at what distance from the village?

Notes of epidemics among cattle should be recorded.

11 Are any religious fairs (mélas) held in the village? If so, are they largely attended and by what classes of people? When are the market days?

What is the average attendance at religious fairs and markets?

12 Are marriage processions frequent? Are they largely attended?

13 The births and deaths should be noted.

How are the dead disposed of? Is cremation thoroughly carried out? What becomes of the ashes? Are dead Musulmans buried in a special cemetery? Are any buried in compounds or within Municipal or village limits? How are the bodies of dead children disposed of? How are persons dead of small-pox and cholera disposed of? Is vaccination popular among the inhabitants?
Notes of epidemics among human beings should be recorded.

14 Meteorological phenomena, such as exceptional rainfall, floods or unusual changes of temperature, should be described.

15 Other unusual phenomena, such as floods, drought, scarcity or famine, should also be noted.

[No. 51.] From C. H. A. HILL, Esq., Officiating Under Secretary to the Government of India, to the Chief Secretaries to the Governments of Madras and Bombay, to the Secretary to the Government of Bengal, Municipal Department, to the Chief Secretaries to the Governments of the North-Western Provinces and Oudh, and the Punjab, to the Chief Commissioners of the Central Provinces, Burma, Assam, and Coorg, to the Resident at Hyderabad,—No. $\frac{7 \text{ Sanitary}}{182\text{-}191}$, dated Simla, the 2nd July 1895.

With reference to Home Department Circular letter No. $\frac{4 \text{ Sanitary}}{83\text{—}92}$, dated the 8th March last, I am directed to forward, for information and for such action as $\frac{\text{His Excellency the Governor in Council}}{\text{H. H. the Lieut.-Governor (\& C. Com.)}}$ $\frac{\text{you}}{\text{}}$ may consider necessary, the accompanying copy of a letter* from Miss Florence Nightingale on the subject of the maintenance of the "Village Sanitary Inspection Book" prescribed under the orders of the Government of India.

* Dated 26th April 1895.
(Addressed to the Private Secretary to His Excellency the Viceroy.)

2. I am to add that copies of the late Dr. Hewlett's pamphlet on "Village Sanitation in India,"† referred to by Miss Nightingale, were forwarded with Home Department letter No. 157—166, dated the 25th April 1891.

†*Vide* Appendix G.

From MISS FLORENCE NIGHTINGALE, to H. BABINGTON-SMITH, Esq., Private Secretary to the Viceroy,—dated 10, South Street, Park Lane, W., London, the 26th April 1895.

I beg to thank you, and to request your kindness to thank His Excellency the Viceroy, for the copy of Circular No. (4 Sanitary, 83—92), and list of questions *re* "Village Sanitary Inspection Book" which you have been so good as to send me.

I have read with the greatest interest these questions, which appear excellent for the purpose in view—nay more, permit me to say that such a book is a most admirable plan for advancing the sanitary cause, and, as a stimulus to the people, most fruitful of future good. I look forward to its becoming of immense value.

As to *Question 4*, might I say that there seems some little ambiguity in the expression "works on drains" and "spring-level"?

Question No. 8, sub-questions 1 and 2.—Might I venture to ask, referring to the fact that in a large village the distribution of wells and tanks as regards population is of importance, should not the position of wells and tanks with reference to population be explained?

Question 9 asks as to conservancy. Would it be desirable to put some sub-question as to conservancy for disposal of house and kitchen refuse, both liquid and solid?

Question No. 10.—Should a question be noted as to whether, in the case of cattle being stalled in dwellings, the manure of the cattle is retained in the dwellings?

Question No. 11.—Should some sub-question be asked, in case of fairs being held, what provision is made for refuse, or for cleanliness of water-supply?

Question No. 13.—Would it be desirable to raise the question as to isolating cases of small-pox or other infectious diseases?

Pardon these queries.

Doubtless the papers have been placed at the disposal of the Press in India; and, if I might make a suggestion, I think that valuable co-operation would be obtained if assistance were invited from the various local Associations, European and Native, interested in the social and sanitary welfare of the people. With reference to those questions, may I take the liberty of sending a copy of a paper* written by the late Dr. Hewlett, Sanitary Commissioner of the Bombay Presidency, presented to the Secretary of State for India.

* *Vide* Append x G.

Besides being Sanitary Commissioner, he had gained, to an extraordinary degree, the confidence of the villagers, and was able to carry them with him in sanitary measures in a most remarkable manner. The paper was thought so well of that it was printed just before his untimely death. Some of these points, noted by Dr. Hewlett, suggest questions of a *practical* kind.

I have marked a few passages which appear to be of interest. But it wants *all* to be marked. It is so full of important suggestions. It is of course framed for application to the Bombay Presidency. The change would be so far-reaching that trial on a moderate scale, to begin with, would be essential, and under an enthusiastic Sanitary Commissioner (or possibly *Collector*), who would understand and yield to native prejudices where necessary to avoid friction.

I suppose some slight modification would be required for other parts of India.

From the Government of India, Home Department, to the Right Honourable Lord GEORGE FRANCIS HAMILTON, Her Majesty's Secretary of State for India,—No. 5, dated Calcutta, the 4th March 1896. **[No. 52.]**

PROVINCE.	SANITARY, 1894. Orders.	VACCINATION, 1894-95. Orders.
Madras	No. 329, dated the 28th October 1895.	No. 285, dated the 5th October 1895.
Bombay . . .	No. 335, dated the 31st October 1895.	No. 356, dated the 31st October 1895.
Bengal . . .	No. 330, dated the 28th October 1895.	No. 283, dated the 3rd October 1895.
North-Western Provinces and Oudh.	No. 381, dated the 31st December 1895.	No. 380, dated the 31st December 1895.
Punjab . . .	No. 356, dated the 5th November 1895.	No. 284, dated the 5th October 1895.
Central Provinces. .	No. 358, dated the 16th November 1895.	No. 363, dated the 5th December 1895.
Burma	No. 288, dated the 7th October 1895.	No. 279, dated the 25th September 1895.
Assam	No. 312, dated the 26th October 1895.	No. 286, dated the 5th October 1895.
Coorg	No. 264-A., dated the 30th August 1895.	Included in the orders on the Sanitary Report.
Hyderabad . . .	No. 351, dated the 31st October 1895.	No. 282, dated the 2nd October 1895.

We have the honour to forward, for your Lordship's information, copies of our orders as marginally noted, on the Sanitary Reports of Local Governments and Administrations for the year 1894, and on the Vaccination Reports for the year 1894-95. Copies of these Reports have already been forwarded to you direct by Local Governments and Administrations. A copy of the Report of the Sanitary Commissioner with the Government of India is being forwarded by this mail, by book-post.

2. We forward, for your Lordship's information, copies of Circular orders † which have been issued to Local Governments and Administrations, regarding the maintenance of Village Sanitary Inspection Books for selected villages. We also take this opportunity of transmitting, for your information, copies of the Resolutions marginally noted which relate to proposals for (1) the re-organization of the Sanitary and Vaccination Department in India, and (2) the revision of the Chemical Analysers' Department and the establishment of an Imperial Bacteriological Laboratory with a view to furthering bacteriological reseanches in India. We shall inform your Lordship of the conclusions at which we may arrive on these matters, after we have received and considered the replies of Local Governments and Administrations.

† No. $\frac{4\text{-Sanitary}}{83-92}$, dated the 8th March 1895.
No. $\frac{7\text{-Sanitary}}{182-191}$, dated the 2nd July 1895.

No. $\frac{11\text{-Sanitary}}{313-326}$, dated the 26th October 1895.
No. $\frac{12\text{-Sanitary}}{339}$, dated the 31st October 1895.
} Not printed.

APPENDICES.

APPENDIX A.

BOMBAY ACT No. I OF 1889.

The Bombay Village Sanitation Act, 1889.

WHEREAS, for the purpose of improving the sanitary condition of villages in the Presidency of Bombay, it is expedient to provide for the constitution of Sanitary Committees and Boards having authority over such villages; It is enacted as follows:

PART I.

PRELIMINARY.

Short title.

1. This Act may be cited as "The Bombay Village Sanitation Act, 1889."

Extent.

XIV of 1874.

2. It is applicable to the whole of the Presidency of Bombay, except the city of Bombay, Aden and its dependencies, Perim, and the scheduled district of the Mehwási Chiefs' villages, as defined in the Scheduled Districts Act, 1874.

Repeal of enactments.

3. During such time as Part II or Part III and the rules made thereunder shall be in force in any village, the enactments mentioned in the schedule shall, to the extent specified in the third column of the schedule, cease to have any operation in the said village.

Definitions.

4. In this Act, unless there be something repugnant in the subject or context:

"Village."

Bo. Act V of 1879.

(*a*) "village" means the site of a village or town, determined for the time being as under section 126 of the Bombay Land-Revenue Code, 1879, together with the area included within a distance of a quarter of a mile from any part of such site, in so far as such site or area is not included within a permanent municipal district or a military cantonment;

"Prescribed."

(*b*) "prescribed" means prescribed by a rule made under this Act;

"Chávdi."

(*c*) "chávdi" means, in any village in which there is no chávdi, such place as the Collector directs shall be deemed to be the chávdi for the purposes of this Act.

Operation of Parts II, III and IV.

5. (1) Part II shall come into force in any village to which the Collector extends the same, under the power hereinafter conferred upon him in this behalf, from such date as the Collector shall direct, and shall continue in force, when so extended, until the Governor in Council directs by Notification in the *Bombay Government Gazette* that it shall cease to have operation in such village, or extends Part III to such village.

(2) Part III shall come into force in any village to which the Governor in Council extends the same, under the power hereinafter conferred upon him in this behalf, from such date as is directed in this behalf by the Governor in Council, and shall continue in force, when so extended, until the Governor in Council directs by Notification in the *Bombay Government Gazette* that it shall cease to have operation in such village.

(3) Part IV shall have operation, as far as its provisions apply, in and in respect of every village in which either Part II or Part III is in force.

Part II how to be extended to a village.

6. (1) Subject to the control of the Commissioner and of Government, the Collector may at any time extend Part II to any village in his district in which Part III is not in force.

(2) For the purpose of extending Part II to any such village, the Collector shall cause to be published, by posting up copies thereof in conspicuous places in his own office and in the office of the Mámlatdár and of the Mahálkari within whose táluka or mahál the said village is situate and in the chávdi or some other public building in the said village, a proclamation in the language of the district, directing that, unless a proclamation be thereafter issued by him to the contrary, Part II shall extend to the said village on and from a date to be specified in the proclamation, which shall not be less than two months after that on which the proclamation is posted up in the village, and stating that any objection which any inhabitant of the village may desire to make to the said extension will, if submitted to the Collector not later than one month before the said specified date, be received and considered.

(3) If, after considering any objections which may have been made as aforesaid, the Collector shall be of opinion that good cause exists for not extending Part II to the village, or for not extending it thereto immediately, he may, by proclamation published as aforesaid:

(*a*) cancel his previous proclamation; or

(*b*) suspend the extension of Part II to the said village for a specified period.

(4) If the Collector suspends the extension of Part II to the village, for a specified period, he may thereafter, by proclamation published as aforesaid:

(*c*) at any time abandon the proposed extension; or

(*d*) from time to time defer the extension for a further specified period.

Part III how to be extended to a village.

7. (1) The Governor in Council may at any time extend Part III to any village in any part of the Presidency to which this Act is applicable, whether Part II is at the time in force in such village or not. Such extension to a village where Part II is in force, shall cause Part II to cease to operate therein.

(2) For the purpose of extending Part III to any such village, the Governor in Council shall, by Notification in the *Bombay Government Gazette*, direct that, unless a Notification be thereafter issued by him to the contrary, Part III shall extend to the said village on and from a date to be specified in the Notification, which shall not be less than three months from the date of the Notification, and stating that any objection which any inhabitant of the village may desire to make to the said extension will, if submitted to a Secretary to Government, or to the Collector, not later than one month before the said specified date, be received and considered.

(3) If, after considering any objections which may have been made as aforesaid, Government shall be of opinion that good cause exists for not extending Part III to the village, or for not extending it thereto immediately, it may, by Notification in the *Bombay Government Gazette*, exercise the like powers with respect to the extension of the said Part as the Collector is authorized to exercise, with respect to Part II by sub-sections (3) and (4) of section 6.

(4) Translations in the language of the district of every Notification issued by Government under this section shall be published by the Collector, without delay, in the manner prescribed in sub-section (2) of section 6 for the publication of a proclamation issued by himself.

PART II.

SANITARY COMMITTEES.

Each village to have a Sanitary Committee.

8. (1) There shall be a Sanitary Committee in every village to which this Part is extended. The said committee shall consist of three or more adult householders, residents of the village, chosen, with their own consent, by the Collector, of whom the Police Patel shall be one, unless the Collector for reasons recorded in writing in any particular case determines otherwise. For the purpose of aiding him in his choice, the Collector may, in his discretion, procure the nomination or election, by the householders of the village, of qualified persons, in such mode as he shall deem expedient.

(2) The chairman of the said committee shall be nominated by the Collector.

(3) The chairman and other members of the committee shall hold office for the prescribed period.

Record of committee's proceedings.

9. The proceedings of the Sanitary Committee shall be recorded in the prescribed manner (or, until rules are made under section 11, in such manner as the Collector by written order directs), by the village accountant or such other person as the Collector appoints in this behalf, and in the absence of the village accountant or person so appointed, by such other person as the committee may employ for this purpose; and the said record shall be verified by the signature of the chairman or of some other member of the committee authorized by the committee in that behalf, below each day's proceedings.

Magistrates having jurisdiction in the village may take part in committee's proceedings.

10. Every Magistrate having jurisdiction in the village may take part in the proceedings of the committee at any meeting thereof at which he is present, and such Magistrate, or if there be more than one, the highest in magisterial rank of such Magistrates, shall for this purpose be deemed to be a member and President of the Committee for the occasion.

Sanitary Committee to make village rules.

11. The Sanitary Committee may from time to time make rules, and repeal or vary the same, with the approval of the Collector:

(*a*) for regulating the terms of office of its members and its proceedings;

(*b*) for determining the manner in which its proceedings shall be recorded;

(*c*) for procuring and preserving for the use of the village an adequate supply of pure potable water;

(*d*) for the cleansing of the streets and open spaces of the village;

(*e*) for preventing accumulations of offensive and noxious matter in the village;

(*f*) for preventing nuisances and indecent or insanitary acts or omissions in the village; and

(*g*) generally for giving effect in the village to the purposes of this Act.

Provisions concerning the making of rules.

12. (1) For not less than three months before any rule which it is proposed to make under section 11 is to come into force, the committee shall exhibit a copy thereof at the chávdi, or some other public building in the village, and there shall be affixed to such copy a notice that objections thereto made in writing to the Collector not later than one month before the date fixed for their coming into force—which date shall be specified—will be received and considered.

(2) Any objections so made shall be considered by the Collector, in conference with the committee. If on such consideration, it shall seem desirable to alter or withdraw the proposed rule, such alteration or withdrawal shall be effected by a notice exhibited as aforesaid. If the Collector deems it expedient to suspend the operation of a rule, it may be suspended for a specified period by a notice exhibited as aforesaid, which shall state that objections thereto, made as aforesaid not later than one month before the expiry of the said period, will be received and considered. Any objection so made shall be considered as aforesaid, and if it then seems desirable to alter or withdraw the rule, the same shall be notified as aforesaid.

(3) Subject to the provisions of sub-section (2), every rule made by the committee, with the approval of the Collector, and notified as aforesaid, shall come into force on the day notified in this behalf.

Prosecution of offenders against the rules.

13. Whenever it shall come to the notice or knowledge of the Sanitary Committee that any person in the village has apparently committed, or is accused of having committed, a breach of any rule made by the committee under section 11, such committee may, by notice in writing, require such person's attendance before the committee.

Cognizance by the committee of offences against the rules.

14. (1) All offences against the rules made by the committee under section 11 shall be cognizable by the committee.

(2) For the purpose of exercising this jurisdiction, the committee shall assemble as often as shall be necessary, or as the Magistrate of the District shall direct at the chávdi or some other convenient place within the village or near thereto.

(3) The committee shall, in the presence of the accused person, or if notwithstanding the service of a notice upon the said person as aforesaid he fails to appear, then in his absence, take evidence as to the alleged offence and any evidence produced by the said person in his defence, and shall thereupon either acquit or convict the accused person and, if he is convicted, may sentence him to such punishment authorized by this Act or by the rules as it thinks reasonable.

Appeals against the committee's decisions.

15. (1) A person convicted by the committee may, at any time within ten days after sentence is passed against him, appeal to the Magistrate of the District or other Magistrate vested under the Code of Criminal Procedure, with appellate jurisdiction over the place where the sentence is passed, or to such other Magistrate, not being a member of such committee, as the Magistrate of the District may, subject to the orders of Government from time to time, appoint in this behalf.

(2) If such person gives notice of his intention to appeal, and deposits with an officer appointed by the Magistrate of the District in this behalf the amount of the fine inflicted upon him, execution of the sentence shall be suspended until the lapse of ten days from the date of the sentence, or, if an appeal is made, until it is disposed of. If within ten days no appeal is made, the sum deposited shall be appropriated to payment of the fine inflicted.

(3) The Magistrate who hears the appeal may confirm, reverse or modify the decision of the Sanitary Committee and may pass any order as to punishment which it was competent to the committee to pass. His order shall be enforced in like manner as one made by the Sanitary Committee.

(4) The said Magistrate may suspend execution of the sentence pending disposal of the appeal when such suspension shall appear to him necessary or expedient, on such terms as shall seem reasonable.

Sanitary Committee may authorize expenditure for necessary works or measures.

16. For the purpose of providing for the village an adequate supply of pure potable water, of cleansing the streets and open spaces thereof, of removing offensive and noxious matter therefrom and for other purposes conducive to the health and comfort of the inhabitants of the village, the Sanitary Committee may utilize, as far as available, the voluntary labour of inhabitants of the village and the services of village servants placed at its command under section 42; and when these means are insufficient, may from time to time, with the approval of the Collector, employ such servants, enter into such contracts, make such deductions and allowances from any rate leviable under its authority, and may authorize the expenditure by the Collector or under his control, of such sums of money as shall be necessary and reasonable, for the purpose aforesaid.

Voluntary subscriptions may be raised for such works or measures.

17. The inhabitants of the village may, by voluntary subscription, raise any sum of money for any of the purposes aforesaid, and such sum may be paid to the Mámlatdár or other officer appointed by the Collector in that behalf and shall by him be placed to the credit of an account which he shall keep in the name of the Sanitary Committee, for the defrayal of charges incurred under this Act for the purpose for which the subscription was raised.

Necessary moneys for expenditure may be raised by a rate on the inhabitants.

18. (1) If any sum of money of which the expenditure is authorized by the committee is not raised by voluntary subscription and is not available from any other source, the same may be recovered by a rate charged on the inhabitants of the village and assessed by the Collector in conference with the Sanitary Committee.

(2) Provided that the aggregate amount to be so charged in any year, on the inhabitants of any village, shall not exceed one-half of the aggregate amount leviable in that year as Local Fund Cess from the inhabitants of such village.

(3) It shall be lawful for the Sanitary Committee, out of any unappropriated balance of money standing to its credit under the provisions hereinafter enacted, to make such contribution on such terms as it shall deem expedient, to the cost of any work under construction by a Local Board, in fulfilment of the duties imposed on it by section 30, clauses (*c*), (*e*) and (*f*) of Bombay Act I of 1884.

PART III.

Sanitary Boards.

Constitution of Sanitary Boards.

19. (1) There shall be a Sanitary Board in every village to which this Part is extended, or one such Board for a group of two or more such villages, as Government may direct. Each such Board shall consist of such number of persons appointed by the Collector as Government directs, the said persons being residents within, or near to, the area which is to be subject to the Board's authority and having property therein, and shall ordinarily include the Police Patels. For the purpose of aiding him in his choice, the Collector may, in his discretion, obtain the nomination or election of qualified persons from amongst whom he will select all or some of the members, according to such mode and local distribution, as shall seem expedient.

(2) Each meeting of such Board shall be presided over by the Magistrate of highest rank present thereat who is a member, or, in the absence of any such Magistrate, by such member as the Collector, subject to the orders of Government, appoints to be the President of the Board. In the absence of any Magistrate and of the President, a meeting of the Board shall be presided over by such one of the members present as may be chosen by the meeting to be chairman for the occasion.

(3) The President and Members of the Board shall hold office for the prescribed period.

Sanitary Board may make rules.

20. The Sanitary Board may from time to time make rules, with the approval of the Collector, and, save as hereinafter provided, shall discharge functions and exercise authority for the area subject to its authority in respect of the same matters, in the same manner, and subject to like provisions, restrictions and conditions as are hereinbefore enacted in the case of a Sanitary Committee.

Appointment of Sanitary Inspector and other officers.

21. (1) The Collector may, subject to the orders of Government, from time to time, appoint a Sanitary Inspector for any area or any part of the area subject to the authority of a Sanitary Board, and also such other subordinates as shall appear necessary, and determine the amount of salary to be paid to each of such officers. He may dismiss or suspend the said officers.

(2) Such Sanitary Inspector may be a person employed by the Táluka or District Local Board having authority at the place. He may be employed by, or on behalf of, two or more Sanitary Boards.

Duties of the Sanitary Inspector.

22. (1) The Sanitary Inspector shall take measures for preventing breaches of the rules in force in the area for which he is appointed, by, from time to time:

(*a*) posting up and otherwise publishing a general admonition respecting the observance of the said rules; or

(*b*) admonishing any person whom he finds offending against any of the said rules; or

(*c*) summoning to appear before the Sanitary Board any person who, from his own observation or from reports made to him by his subordinates, he has reason to think should be prosecuted for offending against any of the said rules.

(2) The Sanitary Inspector shall make such reports and be in such relation to the Sanitary Commissioner, consistent with the duties and obligations imposed on him by this Act or arising out of his position as a servant of a Local or Sanitary Board, as Government may prescribe.

Prosecutions for breaches of rules at instance of the Board.

23. The Board may also, by notice in writing, require the attendance before the Board of any person who is accused of having committed, or who, to the knowledge of the Board, has apparently committed, a breach of any rule made by the board under section 20.

24. (1) All offences against the rules made by the Board under section 20 shall be cognizable by the Board, who, for the purpose of exercising this jurisdiction, shall assemble as often as shall be necessary or as the Magistrate of the District shall direct, at some convenient place within or near to the area subject to its authority.

Cognizance by the Board of offences against the rules.

(2) The provisions of sub-section (3) of section 14 and of section 15 shall apply, as nearly as may be, to the hearing and decision of cases under this section by a Sanitary Board and to appeals by persons convicted by such Board.

25. (1) The orders of every Sanitary Board shall be carried out and its orders and proceedings shall be recorded in the prescribed manner and preserved by such member of the Board or by such officer of the Board or by such other officer, as the Collector may from time to time nominate in this behalf.

Sanitary Board's orders by whom to be carried out.

(2) The person authorized in this behalf shall be bound to keep a true record of the Board's proceedings and orders, under his signature, and truly to prepare all summonses, notices and orders issuing by direction of the Board or of any member thereof, in accordance with this Act or with rules made under section 20.

Sanitary Board may enter into certain contracts.

26. A Sanitary Board may, with the approval of the Collector, contract with any person:

(*a*) for the daily surface-cleansing of the streets and public spaces within the area or any portion of the area subject to its authority, so far as the same cannot be effected by means of the village servants, if any, whose services are placed at its command under section 42; or

(*b*) for the removal from the said area of sweepings, dust, ashes, refuse, rubbish, carcases of dead animals and any offensive or noxious matter.

Works and buildings which may be provided by a Sanitary Board.

27. Every Sanitary Board may, with the approval of the Collector, cause to be constructed such works and buildings as shall be necessary for providing for the area subject to its authority or any part thereof:

(*a*) an adequate supply of water;

(*b*) proper and convenient places for the temporary deposit or final disposal of sweepings, dust, ashes, refuse, rubbish, carcases of dead animals and other offensive or noxious matter;

(*c*) means for conveying away or removing the several matters and things specified in clause (*b*).

Voluntary subscription may be raised to meet a Sanitary Board's expenditure.

28. The inhabitants of the area or of any part of the area subject to the authority of a Sanitary Board may, by voluntary subscription, raise any sum of money for any purpose for which the Board may incur expenditure, and such sum may be paid to the Mámlatdár or other officer appointed by the Collector under section 30, and shall by him be placed to the credit of the Board for expenditure within the area in which, and on the purpose for which, the subscription was raised.

Purposes for which expenditure is to be incurred by Sanitary Board.

29. Every Sanitary Board shall be bound to provide for or authorize the expenditure necessary for:

(*a*) paying the salaries of the Sanitary Inspector and other officers, if any, appointed under section 21; and

(*b*) providing stationery and other requisites for the use of the Board and of the said Sanitary Inspector and other officers, if any; and

(*c*) fulfilling any contract entered into by it under section 26; and

(*d*) constructing necessary works and buildings under section 27.

Sanitary Board's ways and means.

30. (1) A debit and credit account shall be kept by the Mámlatdár or other officer appointed by the Collector in that behalf in the name of each Sanitary Board. To the debit of such account shall be placed all expenditure authorizedly incurred under section 29. To its credit shall be placed all sums raised by voluntary subscription under section 28, all sums realized from any other source for meeting the Board's expenditure and the net proceeds of any rate assessed, as hereinafter provided.

(2) For the purpose of raising money for expenditure by a Sanitary Board under this Act, the Collector may, subject to the same limit as is by section 18 (2) provided in respect of rates charged under section 18 (1), from time to time, in conference with such Board, charge and assess a rate on the inhabitants of the area or of any part of the area subject to the Board's authority.

(3) The burden of any rate charged under sub-section (2) shall be distributed over the several parts of the area subject to the Board's authority, in such proportions as the Collector, in conference with the Board, directs, or, if the Collector, in conference with the Board, so determines, shall be placed wholly on one or more such parts.

PART IV.

General Provisions.

Certain Government Officers to advise Sanitary Committees and Boards.

31. The Executive Engineer of the district and any subordinate of the Executive Engineer, of the Sanitary Commissioner or of a Local Board, having authority at the place, whom the Collector may appoint generally or specially in this behalf shall have, in relation to a Sanitary Committee or Board, such rights and duties as are assigned to certain officers in relation to Local Boards by the first paragraph of section 33 of Bombay Act I of 1884.

Removal from office of members, etc., of Sanitary Committees and Boards.

32. The Collector may, after recording his reasons for the same, remove from office any member or chairman of a Sanitary Committee and, with the sanction of Government, any member, or president of a Sanitary Board, who appears to be incompetent, or who has been guilty of any misconduct or neglect of duty which appears to render his removal expedient.

Filling up of vacancies.

33. (1) Whenever for any reason a vacancy occurs or is about to occur in the office of a member, or chairman of a Sanitary Committee or of a member or president of a Sanitary Board, the Collector shall, without delay, appoint a person to fill such vacancy.

(2) During any such vacancy the continuing members of a Sanitary Committee or Board may act as if no vacancy had occurred.

34. Every question which comes before a Sanitary Committee or Board for decision shall be decided by a majority of votes of the members present and voting at a prescribed meeting of such Committee or Board or at a meeting thereof assembled by direction of the Collector or otherwise after notice duly issued to all the members, the member who presides having a second or casting vote, when there is an equality of votes.

Questions to be decided by majorities.

35. Summonses, notices and orders issued by a Sanitary Committee or Board, or with its authority, may be signed on behalf of the Committee or Board by the member presiding at any meeting of such Committee or Board.

Signing of summonses, etc.

36. A breach of any rule made by a Sanitary Committee or Board under this Act in respect of any matter other than the matters specified in clauses (*a*) and (*b*) of section 11 shall be punishable, unless in any case a smaller maximum punishment is prescribed by the said rules, with fine which may extend to ten rupees and in default with confinement in the chávdi for a period which may extend to forty-eight hours and, in the case of a continuing breach, with fine which may extend to two rupees for every day after conviction for the first breach or after receipt of notice from the Committee or Board or from the Sanitary Inspector, to discontinue the breach, during which the breach continues and, in default, with confinement as aforesaid.

Punishment for breach of rules made under this Act.

37. (1) A Sanitary Committee or Board may allow to a person sentenced to pay a fine such time not exceeding four days as it may think proper for payment of the fine, on such terms as to security as it shall seem to the Committee or Board necessary to impose.

Order for levy of fines.

(2) Whenever default is made in the payment of a fine, the Sanitary Committee or Board, which passed the sentence, or on appeal from whose decision the sentence was passed, may in its discretion by written order direct the levy of the amount, although the sentence directs that, in default of payment of the fine, the offender shall be confined and the offender is or has been confined.

38. All fines for the levy of which an order has been issued as aforesaid, all sums assessed on account of any rate under this Act, which are not paid after reasonable notice, shall be leviable by the patel or by such other person as the Collector or the Sanitary Committee or Board, with the Collector's sanction, appoints in that behalf, by distress and sale of any moveable property of the person liable therefor, subject to such exceptions as are enacted in the Code of Civil Procedure in respect of the sale of moveable property in execution of decrees.

Levy of fines and rates.

XIV of 1882.

39. All fines levied in respect of breaches of rules made under this Act shall, after deducting the expenses, if any, of prosecuting the offenders, be paid to the Mámlatdár or other officer appointed by the Collector under section 17 or 30, and shall by him be placed to the credit of the account of the Sanitary Committee or Board having authority over the village in which the breach was committed, for expenditure on any purpose contemplated by this Act.

Net proceeds of fines to be credited to account of Committee or Board having authority over the villages in which offences are committed.

40. (1) Any district or táluka Local Board may from time to time assign by way of donation or loan to the Sanitary Committee or Board of any village or group of villages in the area subject to its authority, for expenditure on any purpose contemplated by this Act, such sum out of the portion of the local fund at its disposal as it shall think proper.

Contributions and loans from Local Boards.

(2) Any sum so assigned shall be paid to the Mámlatdár or other officer appointed by the Collector under section 17 or 30, and shall by him be placed to the credit of the account of the Sanitary Committee or Board to which it is assigned.

(3) But no sum shall be so assigned by way of loan, without the sanction of the Collector, and every sum assigned by way of loan with such sanction shall be recoverable by the Collector in such instalments of interest and of principal as shall be agreed upon between the parties, by a rate charged and assessed by the Collector, in conference with the Sanitary Committee or Board, upon the inhabitants of the area subject to the authority of such Committee or Board.

41. (1) Works for the supply of water or for the drainage of two or more villages subject to the authority of different Sanitary Committees or Boards and any other work or measure conducive to the common health or comfort of two or more such villages may, upon request made, with the approval of the Collector, by all such Committees and Boards, or by a majority of them, be executed by, or under the direction of, the Collector, or of such other officer as Government appoints in this behalf.

Execution of works in which two or more Sanitary Committees or Boards are jointly interested.

(2) The cost of any such work or measure shall be divided between the several Committees and Boards in such proportions as shall be agreed upon by them, or in default of such agreement, as the Collector shall determine; and shall be recoverable in the said proportions by a rate charged and assessed by the Collector, in conference with each Committee and Board, upon the inhabitants of the areas subject respectively to the said Committee's and Board's authority: subject to the same limit as is provided by section 18, clause (2) in respect of rates charged under section 18, clause (1).

Recovery of cost of such works.

(3) Where any work undertaken or proposed by a Committee or Board constituted under this Act shall be such as to interfere with or materially affect any work undertaken or proposed by a District or Táluka Local Board, such latter Board may require the Sanitary Committee or Board to desist from such work as aforesaid, and it shall thereupon be the duty of the District or Táluka Local Board to make reasonable provision, within reasonable time, for supplying to the area under the authority of the Sanitary Committee or Board, such means of health, cleanliness and decency, or means equivalent thereto, as would have been furnished by the work abandoned in consequence of such requisition as aforesaid.

Abandonment of a work proposed to be undertaken by a Sanitary Committee or Board in favour of a work to be undertaken by Local Board.

(4) For the purpose of obtaining information as to any work intended or in course of construction, to which the provisions of the preceding clause may apply, it shall be lawful for the Táluka or District Local Board to call for such report from the Sanitary Committee or Board, through the Collector, as shall be necessary and reasonable, and to cause such inspection and report to be made by any person in its employment, as it shall deem necessary in this behalf, and it shall be the duty of the Sanitary Committee or Board concerned to comply with such requisition and to give reasonable aid and furtherance to any inspection ordered as aforesaid.

Local Boards may call for information in such cases.

42. Village servants who hold land, profits of land or other emoluments by way of remuneration, wholly or partly, for services consisting in, or connected with, cleansing or conservancy may, as to such services, be placed by the Collector, subject to the control of Government, under the command and superintendence of the Sanitary Committee or Board having authority in the place in respect of

Certain village servants to be placed under command of sanitary committee or board.

which the said services are due, and shall be bound to fulfil all reasonable orders of the said Committee or Board, under such reasonable penalties as may be provided in any rule made under this Act.

43. (1) The Collector shall :

Determination and recovery of dues of village servants placed under command of Sanitary Committee or Board.

(*a*) determine all questions as to the amount of any payment at any time by custom, or under any settlement mentioned in section 18, 19 or 20 of the Bombay Hereditary Offices Act due to a village servant placed under the command of a Sanitary Committee or Board under the last preceding section ; and

(*b*) if necessary, cause the amount which he determines to be due or the money value thereof at the market-rate of the time being, if the due is payable in kind, to be recovered on behalf of the village servant entitled thereto, free of charge, as if the same were an arrear of land-revenue :—

(2) Provided that the Collector may decline to cause such recovery to be made on behalf of any servant, if, in his opinion, the duty in respect of which the payment is due has not been duly performed by such servant.

Collector's functions under this Act may be delegated.

44. Any power conferred, or duty imposed, by this Act upon the Collector may, with the sanction of Government, be delegated by him to an Assistant or Deputy Collector.

Collectors, Magistrates and other public servants subject to usual control in the exercise of their authority.

45. In the discharge of the duties and the exercise of authority assigned to them by this Act, Collectors, Magistrates and other public servants shall be subject to the like control as in the discharge of their ordinary functions.

Indemnity of persons acting in good faith under this Act.

46. (1) No Magistrate, Collector, President, or Member of a Sanitary Committee or Board, or Sanitary Inspector, shall be liable to any penalty or to payment of damages for any act by him done in good faith, in pursuance or intended pursuance of any authority or duty conferred or imposed upon him by this Act.

(2) And no public servant or person duly authorized or appointed shall be liable as aforesaid for giving effect in good faith to any order or direction issued with apparent authority by a person empowered in that behalf under this Act, or under any rule made hereunder.

SCHEDULE.

(*See Section 3.*)

No. and year of enactment.	Subject or title.	Extent of repeal.
Bo. Act VII of 1867 . .	The Bombay District Police Act, 1867.	Sections 33 and 34.
Bo. Act VIII of 1867 . .	The Bombay Village Police Act, 1867.	Clauses 2, 3 and 4 (except the first two and the last thirteen words) and 5 of section 16.

APPENDIX B.

ACT No. VIII OF 1895.

An Act to facilitate the construction of drainage works for improving the sanitary condition of local areas.

PART I.

CHAPTER I.

Preliminary.

Short title, extent and commencement.

1. (1) This Act may be called the Bengal Sanitary Drainage Act, 1895.

(2) Except as hereinafter otherwise provided, it shall extend to all the territories administered by the Lieutenant-Governor of Bengal, which are not included within the limits of any Municipality.

(3) And it shall come into force from the date on which it may be published in the *Calcutta Gazette* with the assent of the Governor General.

Definitions.

2. In this Act, unless there be something repugnant in the subject or context,—

(*a*) "cultivating raiyat" shall have the meaning attached to it in the Cess Act, IX (B.C.) of 1880 :

(*b*) "estate" shall have the meaning attached to it in the Cess Act, IX (B.C.) of 1880 :

(*c*) "holder of an estate or tenure" shall have the meaning attached to it in the Cess Act, IX (B. C.) of 1880 :

(*d*) "local area" means the portion of a district or districts within which a rate is to be levied, in order to liquidate the cost of a scheme adopted by a District Board :

(*e*) "tenure" shall have the meaning attached to it in the Cess Act, IX (B.C.) of 1880 :

(*f*) "the Collector" means, except as hereinafter provided, the officer in charge of the revenue jurisdiction of the district within which the lands, which form the subject of a scheme under this Act, are situated :

(*g*) "the Commissioners" means the Drainage Commissioners under this Act :

(*h*) "the Engineer" means the District Engineer or any Engineer especially appointed by the Local Government to perform the functions of an Engineer under this Act :

(*i*) "tract" means the portion of a district or districts throughout which the Commissioners are authorized to exercise the functions conferred on them under this Act.

CHAPTER II.

Appointment of the Commissioners.

Appointment of "the Commissioners."

3. (1) Whenever an application is received from a District Board, through the Collector and the Commissioner of the Division, reporting that they believe that the sanitary condition of any tract within their jurisdiction has been deteriorated by the obstruction of drainage, whether from natural or artificial causes, the Local Government may—

(*a*) issue, if it think fit, an order indicating approximately the area of the tract affected, and prescribing the appointment of a number of persons, not less than nine, to be the Drainage Commissioners ;

(*b*) direct the District Board to elect not less than half of such number from among the members of the District or Local Board as the case may be ;

(*c*) appoint the remainder of the Commissioners from among the holders of estates and tenures in the tract affected, or from among the managers on behalf of such holders.

(2) The Commissioners so created shall elect one of their number to act as Chairman.

Procedure when several local authorities are interested.

4. (1) When an affected tract, referred to in the last preceding section, includes lands subject to the jurisdiction of more than one local authority, the Local Government, by an order made on the application of any District Board concerned, may constitute a Joint Committee to be elected by all the local authorities concerned ; the number to be elected by each being determined by the Local Government as far as possible in proportion to the interest of such local authority in the tract affected.

(2) The Local Government may further confer on any Committee so constituted, or on such of them as may be specified in the order, all the powers of a District Board under this Act ; and such order may contain such provisions respecting the proceedings of any such Committee, as may seem proper, and may provide for the payment by the local authorities, represented thereby, of the expenses incurred by any such Committee, and for the audit of their accounts.

Resignation of "the Commissioners."

5. The Local Government may from time to time accept the resignation of any of the Commissioners, or may add to their number ; and in the event of any Commissioner dying, retiring, or ceasing to reside in the district in which such tract is situated, the vacancy so caused shall thereupon be filled by appointment or by election, as the case may be ; the conditions of the original appointment or election being in each case strictly observed :

Provided that not less than half the number of the Commissioners shall always be members of the District or Local Board, as the case may be.

PART II.

CHAPTER I.

Drainage Scheme.

The Commissioners to direct survey, etc., and forward survey and preliminary scheme to the Collector.

6. (1) When the Commissioners have been appointed under section 3 or section 5, they shall, without delay, direct the Engineer to prepare a survey, plans and estimates (hereinafter called "the survey") for the restoration or improvement of the drainage of the tract found by him to be affected, and such survey shall be drawn up in accordance with rules to be framed under section 35 (1*a*). On the completion of the survey the Commissioners shall, within a period to be fixed by the District Board which made the application (hereinafter called "the District Board"), forward the same to the Collector of the district within which the tract affected, or the principal part of it, is situated, together with a report (hereinafter called "the preliminary scheme") containing—

(*a*) a statement descriptive of the proposed undertaking, and showing how the drainage is obstructed, with a map of the tract affected ;

(*b*) an estimate of the total cost of the undertaking, including the cost of any land to be acquired under section 16 ;

(*c*) an estimate of the annual cost of maintaining the works :

Provided that, if the tract affected includes any municipal area, the estimate to be framed under clauses (*b*) and (*c*) of this section shall show separately the portion of the cost under each clause, which will be incurred in respect of such municipal area :

Provided further that, if one or more Municipalities fall within the tract, a separate estimate shall be framed of the cost of constructing and maintaining such portion of the works as lies within the area of any such Municipality.

(2) The Collector shall thereupon cause to be prepared—

(*d*) a statement showing the valuation, for cess purposes, of the lands included in the tract affected, and the total amount of cesses actually payable on the same ;

(*e*) an estimate showing the rate bearing a definite proportion to the Road Cess payable direct to Government, which would provide for the payment with interest in the course of thirty years of the amount under clause (*b*) and the capitalized value of the amount under clause (*c*) of this section, excluding the portion to be incurred in respect of the municipal area, if any.

The Collector to publish notification.

7. As soon as possible after the receipt of the survey and preliminary scheme, the Collector shall publish in every village in the tract affected a notification in the language of the district, calling for objections. Such notification shall be in the form in the Schedule hereto annexed, and may be published by posting the same at each post-office and police-station within such tract and in some conspicuous part of each village and at the Court of the Munsif within whose jurisdiction such village, or any part thereof, is situated.

The Commissioners to consider the survey, preliminary scheme and objections, and report thereon.

8. As soon as practicable after the expiry of the period fixed by such notification, the Collector shall forward to the Commissioners the survey and preliminary scheme, together with the petitions of objection, if any, received by him, and shall call upon them to consider such survey and preliminary scheme together with such objections, and within a specified time to forward such survey and preliminary scheme to the Chairman of the District Board, together with their report upon the objections, if any, as well as upon the state of public feeling in regard to such survey and preliminary scheme, and their advice as to their adoption or rejection.

9. On receipt of such survey and preliminary scheme, the District Board shall, within one month's time, proceed to take them into consideration at a meeting specially called for the purpose.

District Board to consider the survey and preliminary scheme.

10. If the District Board reject such survey and preliminary scheme, the cost of such survey and the salary, if any, of the Engineer directed to prepare the same shall be paid by the District Board.

Procedure, if survey and preliminary scheme are rejected.

11. If at such meeting, a majority of the members present acting on the advice of the Commissioners, or, with the approval of a majority of not less than two-thirds of such members (such meeting to consist of not less than one-half of the total number of the members of the Board), acting against the advice of the Commissioners, adopt the survey and preliminary scheme, they shall revise the preliminary scheme in the following manner:—

Procedure, if survey and preliminary scheme are adopted.

(*i*) they shall deduct from the aggregate amount estimated under clauses (*b*) and (*c*) of section 6 the sums, if any, which have been either anticipated or promised as private subscriptions or contributed by the District Board, or provisionally promised by the Local Government;

(*ii*) they shall thereupon submit the preliminary scheme so revised, together with the survey and the report prepared by the Commissioners under section 8, to the Collector.

12. The Collector shall thereupon:—

Procedure to be followed by the Collector.

(*a*) calculate the amount, which if expressed as a rate bearing a definite proportion to the Road Cess leviable within the tract affected, would pay off the balance in equal annual instalments within thirty years (such instalments being fixed), so as to provide for the payment of interest on any sums borrowed from Government or the public;

(*b*) forward such survey and preliminary scheme through the Commissioner of the Division to the Local Government for consideration:

Provided that, if the instalment so fixed shall exceed the amount annually payable as Road Cess within the tract affected, the Collector shall return such preliminary scheme to the District Board for further consideration.

13. The "survey and preliminary scheme" thus adopted or modified shall be hereinafter called the "scheme," and the tract within which the new drainage rate is to be imposed shall be hereinafter called the "local area."

"Scheme" and "local area."

14. The Local Government shall consider the scheme thus adopted or revised, together with the report of the Commissioners, and may approve, modify or reject the same; and if it approve or modify the scheme, it shall thereupon return it, so approved or modified, to the District Board through the Commissioner of the Division, with an intimation of the amount which the Local Government will contribute towards the scheme:

Powers of Local Government.

Provided that, if the modification adds materially to the cost of the operations, the scheme thus modified shall again be laid before the District Board for their consideration.

15. (1) The District Board may, with the previous consent of the Local Government, at any time reconsider the scheme adopted by them, and add to, alter or modify the same; and if any addition, alteration or modification is thereupon made by them, they shall lay before the Local Government the scheme so added to, altered or modified, and the Local Government may sanction the same or any portion thereof; and thenceforth the provisions of this Act shall apply to the scheme as ultimately sanctioned by the Local Government.

District Board may reconsider scheme, etc., adopted by them.

(2) Every material addition, alteration or modification made by the Local Government or by a District Board to, or in, any scheme after the adoption thereof shall be published in the manner provided in section 7, and the provisions of sections 8 to 12 (both inclusive) shall apply.

16. Any land, likely to be needed in carrying out any scheme, sanctioned by the Local Government under this Act, may be acquired under the provisions of the Land Acquisition Act, 1894, or any similar Act for the time being in force for the acquisition of land for public purposes:

Land required for drainage works how to be acquired.

Provided that no compensation shall be paid for land recorded as a water-course in the last Revenue Survey map published under section 4 of Act IX of 1847 or any similar enactment for the time being in force, unless it be proved that such land has been under cultivation for a period of not less than twelve years previous to the acquisition.

17. (1) All works under this Act shall be executed by the District Board, unless the Local Government order such works, or any portion of them, to be executed by more than one District Board, or by an Engineer appointed in that behalf by itself.

Local Government may order execution of drainage works by an Engineer appointed by it.

(2) Any person duly authorized to execute any works under this Act may himself, or by his agents and workmen, enter into or upon any lands forming part of the local area, and carry out such works thereupon as may be required.

CHAPTER II.

EXPENDITURE AND APPORTIONMENT.

What amounts should be included in cost of construction.

18. All amounts paid—

(*a*) as compensation for any lands taken for the purposes of this Act;

(*b*) as salaries of the engineer, officers, servants or establishments specially employed by the Collector, the Commissioners or the District Board for the purposes of this Act;

(*c*) for any surveys, plans, estimates, valuations and incidental expenses connected therewith, whether antecedent or subsequent to the adoption of the scheme, together with all amounts expended in carrying out the purposes of this Act, shall be included in, and be deemed to constitute, the cost of construction of works.

19. (1) The Engineer shall, once in every three months, until the works shall be finally completed, submit to the District Board a detailed Report showing the progress of the works and the amount expended thereon up to date from the commencement of the work or from the date of the last report; and when the works are completed and the accounts closed he shall submit to the District Board a final Report showing the total cost.

Engineer to report progress and completion of works.

(2) If the local area includes areas subject to the jurisdiction of more than one local authority, the proportion of such cost shall be defrayed by each local authority, as far as possible, in proportion to their interest in the work executed.

(3) The District Board shall forward a copy of this Report to the Local Government, through the Commissioner of the Division, with such remarks as to them shall seem fit; and in the event of any local authority objecting to the proposed apportionment, the Local Government shall determine the proportion to be paid by them. The decision of the Local Government thereon shall be final.

Amount to be apportioned how to be determined.

20. The total cost of construction mentioned in section 18 shall be ascertained by adding together—

(*a*) the actual amount expended;
(*b*) the interest payable on the loans under the Local Authorities Loans Act, 1879, if any;
(*c*) the capitalized value of the estimated cost of maintenance.

From this sum shall be deducted the amounts subscribed or contributed as contemplated in sections 11 and 14.

The Collector to determine rate.

21. On receipt of the final Report mentioned in section 19, the District Board shall require the Collector, within three months, to determine the amount of rate, which shall be collected with the Road Cess annually payable direct to Government within the local area, and shall be sufficient to provide for the payment of the cost of construction as defined in section 20, in the course of not more than thirty years, excluding the portion to be incurred in respect of the municipal area, if any.

Rate to be published and to be paid with the Road Cess.

22. (1) The rate so determined shall be published as provided in section 40 of the Cess Act, 1880; and shall be paid, together with the Road Cess payable by those liable to pay such cess, direct to Government within the local area, until such time as the period of not more than thirty years from the date of publication shall have expired, or the cost of construction of the works has been liquidated.

(2) All arrears of such rates shall be recoverable under the law for the time being in force for the recovery of Public Demands.

Share to be recovered by estate or tenureholder.

23. Any holder of an estate or tenure, who shall pay to the Collector any instalment of such rate payable under the last preceding section shall be entitled to recover half the amount of the instalment so paid from the holder of a tenure or cultivating raiyat holding lands within the local area under such holder of an estate or tenure, in the same proportion and in the same manner as he is entitled to recover road cess or public works cess, payable under the provisions of the Cess Act, 1880.

Amount to be recovered by tenure-holder from raiyat.

24. Any holder of a tenure, who shall pay to the holder of an estate or tenure the sum due to such holder under the last preceding section, shall be entitled to recover half the sum so paid from the cultivating raiyats holding lands within the local area under such holder of a tenure, in the same proportion and in the same manner as he is entitled to recover road cess or public works cess, payable under the provisions of the Cess Act, 1880.

Recovery of Municipal portion of cost.

25. (1) When the local area includes a municipal area, the amount payable under section 19 shall be defrayed by the Municipality.

(2) In order to provide for the payment with interest of such Municipal share at the rate payable to Government by the District Board within a period of not less than thirty years, the amount required may be raised by an additional rate to be added to the tax upon persons, or to the rate on the annual value of holdings as the case may be.

PART III.

CHAPTER I.

Miscellaneous.

Drainage works subject to laws relating to public embankments.

26. All outlets and water-channels, natural or artificial, which shall be cleared, altered, enlarged, excavated or cut under the provisions of this Act, and the construction and maintenance of embankments and dams and works therein or connected therewith, shall be subject to the law, for the time being in force, regulating the construction and maintenance of public embankments, rivers, channels and outlets.

Penalty for constructing weirs, etc., obstructing public drainage.

27. (1) Any person who, without lawful authority, erects, or causes to be erected, any weir or other obstruction in any outlet or water-channel, or cultivates the bed of a water-channel, so as to obstruct natural drainage, shall, upon conviction before a Magistrate, be liable to a penalty not exceeding two hundred rupees for every such offence.

(2) It shall be in the discretion of such Magistrate to direct any such offender to remove and pay for the entire cost of the removal of any such obstruction.

Lands taken and works constructed under Act to be under District Board.

28. All lands which are taken under the provisions of this Act for the purpose of the construction of works therein or thereon, and all works constructed under the provisions of this Act, as well as all outlets, water-channels, embankments and dams so constructed, cleared, altered, enlarged, excavated or cut, shall be under the control and administration of the District Board.

Powers of the Commissioners, etc., in taking evidence.

29. The Commissioners, the Collector, and the Commissioner of the Division shall have all such powers as are conferred on Civil Courts by the Code of Civil Procedure for the purpose of compelling the attendance of witnesses and the production of evidence, and for the purpose of examining witnesses in any enquiry or appeal which they may be empowered to make or entertain under the provisions of this Act.

Proceedings not to be invalidated by irregularities.

30. No proceeding under this Act shall be defeated or invalidated by reason of any defect or omission in the publication or service of any notification, notice or order, unless material injury is done to any person by such defect

Commission.

Local Government may empower any person to act for the Collector.

31. The Local Government may specially empower any person to do all such acts, to discharge all such functions, and to exercise all such powers as may be done, discharged or exercised by a Collector under this Act; and on any person being so specially empowered, such person may do all such acts, discharge all such functions, and exercise all such powers, and such person shall be deemed to be the Collector for the pusposes of the scheme, in respect of which he is so specially empowered.

32. (1) The Collector may, with the sanction of the Commissioner of the Division, delegate to any Deputy or Assistant Collector, the performance of any acts, or the discharge of any functions which the said Collector may perform or discharge under this Act.

The Collector may delegate his authority to another.

(2) Upon such delegation, such Deputy Collector or other Officer may do such acts, discharge such functions, and exercise such powers for the performance of the same, as the Collector may exercise under this Act:

Provided that all acts done, functions discharged, and powers exercised by such Officer, shall be done, discharged, or exercised subject to the control and supervision of the Collector.

33. Notwithstanding anything hereinbefore contained, all the proceedings of the Commissioners and of the Collector under this Act shall be subject to the general control and supervision of the Commissioner of the Division, or, when the tract or local area affected comprises lands situated in more than one Division, of such Commissioner as the Local Government may direct.

Proceedings of the Commissioners and the Collector subject to control of Commissioner of Division.

34. If at any time the Local Government is satisfied that the cost of any scheme of works, including the cost of maintenance, has been erroneously estimated, it may direct that the scheme be no further proceeded with, until the same has been revised.

Local Government may direct cessation of work and revision of the scheme.

CHAPTER II.

Rules.

35. (1) It shall be lawful for the Local Government, from time to time, to make, and, when made, to alter or repeal rules not inconsistent with this Act for the purpose of—

Power of Local Government to make rules and to cancel them.

(*a*) prescribing the forms of accounts, surveys, plans, estimates, periodical statements and reports;

(*b*) regulating the conduct of business at the meetings of the Commissioners;

(*c*) regulating the instalments by which, and the mode in which, sums payable under this Act shall be paid;

(*d*) regulating the carrying out and maintenance of works, when one or more local authorities are concerned;

(*e*) ascertaining the capitalized value of the estimated cost of maintenance of drainage works;

(*f*) providing for professional supervision over the preparation of surveys, plans and estimates, and the execution and maintenance of drainage works;

(*g*) allotting the duties of the Collector under this Act among Collectors of different districts as may be convenient; and

(*h*) generally carrying out the purposes of this Act.

(2) The Local Government shall, before making, altering or repealing rules under this section, publish a draft of the proposed rules and alterations and a notification of the proposed repeals, in three consecutive numbers of the *Calcutta Gazette*, and shall specify a date, not less than one month from the date of publication, at or after which such draft and notification will be taken into consideration.

(3) The Local Government shall receive and consider any objection or suggestion which may be made by any person with respect to such draft and notification before the date so specified.

(4) Every rule so made or altered, and every repeal of any such rule under this section shall be thereafter published in the *Calcutta Gazette*.

SCHEDULE.

(*See section 7.*)

BENGAL SANITARY DRAINAGE ACT, 1895.

To all whom it may concern.

TAKE notice, that with the object of improving the sanitary condition of the country, it is proposed to restore or improve the drainage in the thanas of.....district.....

Copies of the plans and estimates of the work proposed, which will affect (so many) villages, are now in the office of..... and may be inspected by any persons interested at any time between 11 A.M. and 5 P.M., Sundays and holidays excepted, up to and including the.....day of.....

It is estimated that, if the said drainage scheme is carried out, a rate will be payable by the residents of the villages affected which will be equivalent to.....on every rupee now paid as Road Cess for a period of 30 years from the date of the completion of the works, unless the District Board shall decide to collect the amount within a shorter period.

Any person objecting to the execution of the said works shall submit a petition in writing, duly signed, to the Collector of.....on or before the.....day of..... .....

Any person who does not object in the manner and within the time mentioned, shall be held to have assented to the execution of the works.

Collector.

APPENDIX C.

ACT No. II OF 1892.

An Act to make better provision for sanitation in Villages in the North-Western Provinces and Oudh.

WHEREAS it is expedient to make better provision for sanitation in villages in the North-Western Provinces and Oudh, it is hereby enacted as follows:—

Title, extent and commencement.

1. (1) This Act may be called "The North-Western Provinces and Oudh Village Sanitation Act, 1892."

(2) It extends to the territories for the time being administered by the Lieutenant-Governor of the North-Western Provinces and Chief Commissioner of Oudh.

(3) It shall come into force at once.

Definitions.

2. In this Act, unless there is something repugnant in the subject or context,

(1) "Village" means an inhabited site, but does not include a municipality or cantonment;

(2) "Village lands" mean the lands included in the revenue mauza or mauzas in which the village is situated;

(3) "Well" means a well, the water of which is habitually used for drinking purposes by all or some of the inhabitants of a village;

(4) "Collector" means any Revenue Officer in independent charge of a district, and any Officer appointed by the Government to discharge throughout any specified local area the functions of a Collector under this Act.

(5) "Magistrate" means the District Magistrate and any Magistrate empowered by Government, by name or virtue of his office, to exercise the powers of a Magistrate under this Act;

(6) "Sanitary Commissioner" includes a Deputy Sanitary Commissioner;

(7) "Proprietors of village lands" mean the proprietors of the mahál or mahálsin which the village lands are situated; and, in sub-settled mahálsmean the persons with whom sub-settlement has been made.

Application of certain sections of the Act to notified villages.

3. Part I shall not apply to any village until, by order notified in the Gazette, the Government shall have declared it applicable to the district in which the village is situated.

PART I.

Power to cause local enquiry to be made into the sufficiency and purity of the water-supply.

4. In any village in which the provisions of Act XX of 1856 are in force, or which contains not less than 2,000 inhabitants, the Collector may cause a local inquiry to be made, through the agency prescribed by rules made under section 20, into the sufficiency and purity of the water-supply of the village, with the view of ascertaining any or all of the following matters:—

(1) whether the water of any well is contaminated from surface drainage, or from any other cause against which effective measures of protection can be taken;

(2) whether the water of any well is dangerous to health, and its impurity is due to causes against which effective measures of protection cannot be taken;

(3) whether the construction of additional wells is necessary for the health of the inhabitants of the village.

Action that may be taken by the Collector on considering the result of the local enquiry.

5. The Collector shall take into consideration the result of the above enquiry, and may—

(1) by the publication of notice in the manner prescribed, direct that any well be cleaned, improved, repaired, or otherwise protected from contamination, by, or at the expense of, those of the inhabitants of the village who are found on local inquiry to use the well;

(2) after recording his reasons, condemn any well referred to in section 4 (2);

(3) by the publication or service of notice in the manner prescribed, direct that one or more additional wells be constructed by the proprietors of the village lands.

Power of Collector to close or keep open a condemned well.

6. When a well has been condemned in accordance with the provisions of section 5 (2), the Collector may either cause it to be filled up and closed, or, if it be a masonry well and is used for irrigation, allow it to remain open, on the condition that the inhabitants of the village abstain from using it for drinking purposes.

Publication of order prohibiting the use of a condemned well for drinking purposes.

7. When the Collector allows a condemned well to remain open under section 6, he shall cause the contents of his order to be published within the limits of the village, and shall direct—

(1) the inhabitants of the village to abstain from using the water of such well for drinking purposes; and

(2) the proprietors of the village lands to affix and maintain upon, or adjacent to, such well a conspicuous notice or mark indicating that the use of the water for drinking purposes is prohibited.

Power of Collector to close a condemned well, if the prohibition issued under section 7 is disregarded.

8. If at any time it be proved to the satisfaction of the Collector that the prohibition issued under the preceding section respecting the use of a well for drinking purposes is disregarded, he may forthwith cause such well to be filled up and closed.

Contents of notice issued under section 5.

9. Every notice issued under section 5 shall specify the nature and extent of the work to be executed, its estimated cost, and the period within which it is to be completed:

Provided that no notice shall be issued under clause (3) of section 5, if the estimated cost of the work exceeds the limit prescribed by rules made under section 20.

Power of Collector to execute the work himself.

10. On the expiration of the period prescribed in any notice issued under section 5, the Collector shall ascertain whether the direction conveyed by the notice has been satisfactorily complied with; and may in default of such compliance proceed to execute the work himself;

Provided that he may, on sufficient cause being shown, extend the period specified in the notice, or modify or rescind the direction conveyed by it.

Application to Collector for a loan of public moneys.

11. Whenever notice has been issued under section 5 directing that measures be taken with regard to any existing well, or that a new well be constructed, the persons affected by the notice, or a majority of them, may apply to the Collector for a loan of public moneys for the purpose of executing the work specified in the notice: and the Collector, on being satisfied that the applicants are competent to execute the work, may grant to them in loan a sum not exceeding the amount specified in the notice, and may direct that it be paid to such person among the applicants as they may appoint.

12. Whenever the Collector has expended money under section 10, or has made a loan under section 11, he shall forthwith prepare a list of the persons from whom such expenditure or loan is declared to be recoverable under the provisions of the next section.

Preparation of list of persons from whom sums expended or advanced by Collector are recoverable.

13. All sums expended by the Collector under section 10, and all loans made by him under section 11, shall be recoverable in accordance with the following provisions :—

Manner of recovery of sums expended or advanced by Collector.

(1) In the case of a well referred to in section 5 (1) from the persons found by the local inquiry to use the well in proportion to their respective means and circumstances, and in accordance with any rules that may be made under section 20 ;

(2) In the case of a well referred to in section 5 (3):—

(*a*) one-quarter from the general provincial fund constituted by Acts III and IV of 1878 ;

(*b*) one-quarter from the proprietor or proprietors of the village lands in proportion to their respective proprietary shares in those lands ;

(*c*) one-half from persons, including proprietors of village lands, owning or occupying houses, situated within the village, or if the Collector so determine, situated in that portion of the village which will chiefly benefit from the well, with reference to their respective means and circumstances, and in accordance with any rules that may be made under section 20.

14. The Government may, after previous publication, make rules regulating conservancy, providing for the protection and periodical examination of the water-supply, and defining and prohibiting nuisances in any village in which a local inquiry has been held under section 4.

Additional power of Government to make rules regarding conservancy.

15. (1) In making any rule under the preceding section the Government may direct that a breach of it shall be punishable with fine, which may extend to ten rupees.

Penalty for breach of rules.

(2) All fines recovered under this section shall be applied as the Government shall from time to time direct.

PART II.

16. Advances may be made by the Collector for the repair, improvement or construction of wells in any village, whatever be its population, provided that the applicant furnishes sufficient security for the re-payment of the advance.

Advances for the repair, construction or improvement of wells.

17. When the Magistrate and the Sanitary Commissioner, or the Civil Surgeon, acting in concert, have ascertained that a serious epidemic or infectious disease is present in the district, or in any part of the district, and that special preventive measures are required, they may record their reasons in writing, specifying at the same time the tract in which such preventive measures are required. The Magistrate may then, subject to the provisions of any rules made under section 20, take such measures as he may deem necessary for the following purposes in any village, which is situated in the said tract, and in which an outbreak of the disease has either taken place or is apprehended, namely :—

Power to take special measures to prevent outbreak or spread of infectious disease.

(1) the cleansing and conservancy of the site ;
(2) the disposal of corpses by cremation or burial ;
(3) the prohibition of the use for drinking purposes, or the closing of any source of water-supply ; and
(4) the disposal or destruction of materials likely to convey infection.

18. Subject to the rules made under section 20, sums expended by the Magistrate under the preceding section shall be recoverable, in whole or in part, from the proprietors of village lands, and owners and occupiers of houses in the village, with reference to their respective means and circumstances.

Recovery of sums expended under the preceding section.

19. When any hut, shed, clothing, bedding, or other article which is likely to retain infection is destroyed under the provisions of section 17, clause (4), the Magistrate shall pay such compensation, if any, as he may consider reasonable, to any person sustaining substantial loss thereby ; but no person shall be entitled as of right to claim compensation for any loss or damage sustained by him by reason of such destruction.

Compensation to be paid for destruction of materials likely to retain infection.

PART III.

Power of Government to make rules.

20. (1) The Government shall make rules consistent with this Act :—

(*a*) prescribing the agency by which the local enquiry referred to in section 4 shall be conducted ; and

(*b*) fixing the limit referred to in the proviso to section 9.

(2) the Government may, after previous publication, make rules consistent with this Act

(*a*) defining the manner in which notices and injunctions shall be published or served ;

(*b*) determining the rate of interest (if any) to be charged on advances made under this Act, and on sums expended by the Collector under section 10 ;

(*c*) fixing the period within which, and the instalments by which, such advances and sums shall be re-paid ;

(*d*) prescribing the manner of keeping and auditing the accounts of the expenditure of such advances and sums, and of the re-payment made in respect of the same ;

(*e*) prescribing the mode of assessment of sums recoverable under section 13 and the agency by which such sums shall be assessed and recovered :

(*f*) prescribing the measures which may be taken under section 17 ;

(*g*) limiting the sums which may be recovered under section 18 ;

(*h*) specifying the cases in which any action taken under section 17 shall be reported to the Government ; and

(*i*) generally for the purposes of giving effect to the provisions of this Act.

21. Any sum becoming due under this Act, and not paid on or before the date fixed for payment, shall be recoverable by the Collector as if it where an arrear of land-revenue.

Recovery of arrears due to Government.

APPENDIX D.

ACT No. III of 1894.

An Act to confer powers and impose duties upon Municipal Authorities in the North-Western Provinces and Oudh for the construction and maintenance of drainage and sewerage works.

Whereas it is expedient that provision should be made for the construction and maintenance of drainage and sewerage works in the municipalities of the North-Western Provinces and Oudh, and that powers should be conferred, and duties imposed, upon municipal authorities in relation thereto :

It is hereby enacted as follows :—

CHAPTER I.

PRELIMINARY.

Title, extent and commencement.

1. (1) This Act may be called "The North-Western Provinces and Oudh Sewerage and Drainage Act, 1894."

(2) It extends to the territories for the time being administered by the Lieutenant-Governor of the North-Western Provinces and Chief Commissioner of Oudh : and

(3) It shall come into force on such date as the Lieutenant-Governor and Chief Commissioner may, by Notification in the Gazette, fix in this behalf.

Validation of acts done before the passing of the Act.

2. All acts done before the passing of this Act by a municipal authority in the belief that it had legal authority to do the same, which could have been lawfully done if the Act had been in force, shall be deemed to have been lawfully done.

Definitions.

3. In this Act, unless there is something repugnant in the subject or context,—

(1) " municipal authority " means—

(*a*) a Municipal Committee appointed under the provisions of Act XV, 1873 :

(*b*) a Municipal Board constituted under the provisions of Act XV, 1883:

(2) " municipality " means a local area to which this Act may be extended under section 5 :

(3) " street " means any street, road, thoroughfare, passage, or place over which the public have a right of way : and includes the surface soil and subsoil of any such street, and the footway and surface drains of any such street, and any bridge, culvert, or causeway forming part of any such street :

(4) " owner " includes the person for the time being receiving the rent of lands and buildings, or either of them, whether on his own account or as agent or trustee for any person or society, or for any religious or charitable purpose, or who would so receive the same if the land or building were let to a tenant :

(5) " sewage " means night-soil and other proper contents of water-closets, latrines, urinals, privies, drains and cesspools :

(6) " drain " includes a sewer, pipe, ditch, channel, or any other device for carrying off sullage, sewage and polluted water, or rain water or subsoil water, together with pail-depôts, traps, sinks, cisterns, flush-tank, and other fittings appertaining thereto :

(7) " nuisance " includes any act, omission, place, or thing which causes or is likely to cause injury, danger or offence to the sense of sight, smell or hearing, or which is, or may be, dangerous to life or injurious to health or property : and

(8) " municipal drain " means a drain belonging to the municipal authority or under its direction, management and control.

Savings.

4. (1) Nothing in this Act shall affect any provision of the Indian Railways Act, 1890, or any rule made under that Act.

(2) Nothing in sections 22, 29 and 30 shall apply to any factory regulated by the Indian Factories Act, 1881, and the Indian Factories Act, 1891.

CHAPTER II.

EXTENSION OF THE ACT AND CONSTRUCTION AND MAINTENANCE OF DRAINAGE AND SEWERAGE WORKS.

Application for an order extending the Act.

5. On an application of the municipal authority of any place, in pursuance of a resolution made at a special meeting, the Government may, by order, extend, on and from a date to be specified in the order, this Act to the area included within the limits of such place or to any part thereof :

Provided that no provision of this Act shall be applicable to a railway station, and to buildings and land appurtenant thereto, without the previous sanction of the Governor General in Council.

Publication of order.

6. (1) Every order extending this Act to a municipal area shall be notified in the Gazette in English and in any other language the Government may prescribe in that behalf ; and such Notification shall be conclusive proof that the order has been made as required in the preceding section.

(2) The Government may cancel or vary a Notification made under this section.

Construction of sewerage and drainage works by the Municipal authority.

7. (1) On the extension of this Act to a municipal area, the Municipal authority shall, within such time as the Government may direct, cause to be carried out such a system of sewerage and drainage as may be necessary for effectually draining the municipality, subject to the approval of the Government, and to such alterations as may from time to time be ordered by it.

(2) The cost of carrying out the works under sub-section (1) and of managing and maintaining them after they have been carried out shall be met from the general municipal fund at the disposal of the municipal authority, and shall be deemed to be a proper charge on the fund.

Property vested in the Municipal authority.

8. Subject to any special reservation which may be made by the Government, all property of the nature hereinafter in this section specified and situated within the municipality, shall be vested in and belong to the municipal authority, and shall be under its direction, management and control, and shall be held and applied by it for the purposes of this Act : that is to say—

(*a*) all public streams, springs and works for the supply, storage, distribution and disposal of water for sewerage and drainage purposes, and all bridges, buildings, engines, materials and things connected therewith or appertaining thereto ;

(*b*) all public drains, culverts and water-courses in, alongside or under any street, and all works, materials and things appertaining thereto;

(*c*) all public manure and sewage depôts.

Property under the management of the Municipal authority.

9. All drains, culverts and water-courses in, alongside or under any street, and all works, materials and things appertaining thereto situated within the municipality other than those specified in section 8, shall, for the purposes of this Act, be under the direction, management and control of the Municipal authority.

Power to make drains.

10. The Municipal authority may construct within the municipality and, when necessary, for the purposes of disposal or outfall of sewage, without the municipality, such drains as it may think necessary for keeping the municipality properly cleansed and drained; and may carry such drains through, across, or under any street or place, and after reasonable notice in writing to the owner or occupier, into, through, or under any buildings or lands whatsoever:

Provided that no drain shall be constructed within the limits of a cantonment without the previous sanction of the Governor General in Council.

Power to alter and discontinue Municipal drains.

11. The Municipal authority may, from time to time, enlarge, lessen, alter the course of, cover in, or otherwise improve any municipal drain, and may discontinue, close up, or destroy any such drain that has in its opinion become unnecessary, on condition of providing a drain as effectual for the use of any person who may be deprived in pursuance of this section of the lawful use of any drain.

Power to close streets.

12. The municipal authority may close temporarily any street or any part thereof for the purpose of constructing repairing, altering, or cleansing any drain.

Disposal of sewage.

13. The Municipal authority may cause any municipal drain to communicate with, and be emptied into, such place as may be fit and necessary within the municipality, and, if necessary for the purposes of disposal or outfall of sewage, without the municipality, but not so as to create a nuisance; and may cause the sewage therefrom to be collected for sale, or for the improvement of land, or for incineration, or for any purpose whatsoever, but not so as to create a nuisance.

Unauthorized buildings, etc., over Municipal drains.

14. The Municipal authority may remove or otherwise deal with as it may think fit any street, building, wall, or other structure made or constructed or tree planted over any municipal drain without its permission in writing, and the expenses thereby incurred shall be paid by the person by whom the street, building, wall, or other structure was made or constructed.

Affixing of shafts or pipes for ventilation of drains.

15. The Municipal authority may erect upon any premises, or affix to the outside of any building, or to any tree, any such shaft or pipe as it may deem necessary for the proper ventilation of the municipal drains, and such shaft or pipe shall be carried to a height of not less than six feet above the highest part of the highest adjacent house and erected so as not to cause any nuisance or inconvenience to any house in the neighbourhood.

Construction and maintenance of basins, reservoirs, depôts, etc., and public latrines, etc.

16. Subject to rules made by the Government, the municipal authority shall provide and maintain—

(1) such basins, reservoirs, depôts, receptacles, or other works as may be required in connection with the drains belonging to it; and

(2) such public latrines, privies and urinals as may be reasonably required for the public accommodation.

Maintenance and cleaning of Municipal drains.

17. The Municipal authority shall cause the Municipal drains to be constructed, covered, ventilated, repaired, inspected and kept so as not to be a nuisance, and to be properly cleansed, flushed and emptied.

Maintenance and cleaning of private drains.

18. All drains not belonging to the Municipal authority shall be maintained and repaired by the owners and, subject to such other arrangement as may be made by the Municipal authority in this behalf, shall be flushed, cleansed and emptied by the occupiers of the buildings or lands for the sole use and benefit of which the said drains were constructed.

CHAPTER III.

DRAINAGE OF PREMISES.

Power of owners and occupiers of buildings and lands to drain into Municipal drains.

19. (1) Subject to such rules as the Municipal authority may prescribe under Chapter V and to such directions and conditions as it may specify in each case, the owner or occupier of any building or land may cause his drain to connect with a municipal drain.

(2) The Municipal authority may close, demolish, alter, or re-make any connection made in contravention of the preceding clause of this section, and may recover the expenses thereby incurred from the person offending.

Power of Municipal authority to enforce drainage-connection with Municipal drains.

20. (1) When any building or land situated within one hundred feet of a municipal drain is at any time not drained to the satisfaction of the municipal authority by any or a sufficient drainage-connection with such drain, the Municipal authority may, by notice, require the owner or occupier of such building or land to make and maintain a drainage-connection with the drain in such manner as the Municipal authority may, subject to rules made under section 33, sub-section (3), direct.

(2) The provisions of sections 40 and 41 shall apply to any default in compliance with any such requisition, notwithstanding that part of the land through which the said drainage-connection is required to pass may not belong to the person so making default, unless he shall prove that the default was caused by the act of the owner or occupier of such last-mentioned land, and he has made application to the Municipal authority under section 21.

Carrying drain of one person under the land of another.

21. (1) The Municipal authority may, on application made to it, or on its own motion, call upon the owner of any building or land abutting on, or having a drain connected with, the Municipal drains, to show cause why the drain of an adjoining building or land, which has no direct access to the Municipal drains, should not be carried through or under his building or land, or should not be connected with his drain.

(2) If the Municipal authority, after hearing the objections, if any, made by the person on whom the notice was served, considers that the drain or drainage-connection should be made, it may record an order to this effect,

and if the parties concerned fail to agree, within the period stated in the order, as to the construction of the said drain or connection, may itself construct it, recovering the cost from the person by whom the application was made or on whose behalf action was taken under sub-section (1).

(3) The order shall set out, in writing, the respective responsibilities of the parties concerned for the maintenance, repair and cleansing of the drain or connection, and shall fix the sum (if any) in the form of an annual rent or otherwise, payable by the person by whom the application was made, or on whose behalf action was taken under sub-section (1), to the owner of the land or building through or under which the connection or drain is to pass.

(4) If the sum so awarded take the form of a lump payment, the Municipal authority shall recover it along with the costs of construction, and shall pay it to the person to whom it is due. If a recurring rent has been awarded, the person to whom it is due may recover it by suit in any Civil Court having jurisdiction.

Provision and removal of drains, privies, etc.

22. (1) The Municipal authority may, by notice, require the owner or occupier of any building or land to remove or provide any drain, privy, cess-pool, or other receptacle for filth, or to provide any additional drains, privies, cess-pools, or other receptacles as aforesaid, which should in its opinion be provided for the building or land, of such description and in such manner as the Municipal authority may direct.

(2) The Municipal authority may, by notice, require any person employing more than twenty workmen or labourers to provide such latrines and urinals as it may think fit, and to cause the same to be kept in order and to be daily cleansed.

(3) The Municipal authority may, by notice, require the owner or occupier of any building or land to have any privy provided for the same shut out by a sufficient roof and wall or fence from the view of persons passing by or dwelling in the neighbourhood, or to remove or alter, as the Municipal authority may direct, any door or trap-door of a privy opening on to any street or drain.

Repair and closing of drains, privies and cess-pools.

23. (1) The Municipal authority may, by notice, require the owner or occupier of any building or land to repair, alter, put in good order or close any drain, water-closet, privy, latrine, urinal or cess-pool.

(2) The Municipal authority may, by notice, require any person who may construct any new drain, water-closet, privy, latrine, urinal or cess-pool in contravention of any provision of this Act, or of any rule prescribed under Chapter V, or of any specific direction given by the Municipal authority, or who may construct, re-build, or open any drain, water-closet, privy, latrine, urinal or cess-pool which it has ordered to be demolished or stopped up or not to be made, to demolish the drain, water-closet, privy, latrine, urinal or cess-pool, or to make such alteration therein as it may think fit.

Removal of latrines, etc., near any source of water-supply.

24. The Municipal authority may, by notice, require any owner or occupier on whose land any drain, privy, latrine, urinal, cess-pool or other receptacle for filth or refuse for the time being exists within fifty feet of any spring, well, tank, reservoir or other sources from which water is or may be derived for public uses, to remove or close the same within one week from the service of such notice.

Separation of drains for sewage and rain water.

25. The Municipal authority may require that there shall be one drain for sewage, sullage and polluted water, and an entirely distinct drain for rain water or subsoil water.

Power to require removal of nuisance arising from tanks and the like.

26. The Municipal authority may, by notice, require the owner or occupier of any land or building to cleanse, repair, cover, fill up, or drain off any private well, tank, reservoir, pool, depression or excavation therein which may appear to the municipal authority to be injurious to health, or offensive to the neighbourhood:

Provided, that if for the purpose of effecting drainage under this section, it should be necessary to acquire any land not belonging to the same owner, or to pay compensation to any person, the Municipal authority shall provide such land or pay such compensation.

Removal of projections and obstructions.

27. The Municipal authority may, by notice, require the owner or occupier of any building to remove or alter any projection or structure, added to, or placed against, the building without the written permission of the Municipal authority, which covers, overhangs, projects into, or encroaches on any municipal drain.

Provided that, in the case of any projection or encroachment lawfully in existence at the commencement of this Act, the Municipal authority shall make reasonable compensation for any damage caused by the removal or alteration.

Recovery of cost of work by the occupier.

28. When the occupier of any building or land has, in compliance with a notice issued by a Municipal authority, executed any work for which the owner of such building or land is responsible, either in pursuance of the contract of tenancy or by law, he shall be entitled to recover from the owner, by deduction from the rent payable by him or otherwise, the reasonable cost of such work.

CHAPTER IV.

Powers of Entry and Inspection.

Inspection of drains, etc., by the Municipal authority.

29. The Municipal authority shall provide for the systematic inspection of all drains, privies, latrines, water-closets, urinals, cess-pools and other receptacles for filth not belonging to it.

Power to enter on buildings and land for purposes of inspection.

30. (1) The Municipal authority, by any person authorized by it in this behalf, may, between sunrise and sunset, enter into any building or upon any land, and inspect any drains, privies, water-closets, latrines, urinals, cess-pools and other receptacles for filth therein or thereon, and may cause the ground to be opened where such person as aforesaid may think fit for the purpose of preventing or removing any nuisance likely to arise or arising therefrom.

(2) If, on such inspection, it appears that the opening of the ground was necessary for the prevention or removal of a nuisance, the expenses thereby incurred shall be paid by the owner or occupier of the land or building; but if it is found that no nuisance exists, or but for such opening would have arisen, the ground or portion of any building, drain or other work, if any, opened, injured or removed for the purpose of such inspection shall be filled in, re-instated, and made good by the Municipal authority.

(3) No building other than a latrine or urinal shall be entered under this section until six hours' notice in writing has been given to the occupier, if any, of the building by the Municipal authority, or by the person authorized by the Municipal authority to make the entry.

31. The Municipal authority, by any person authorized by it in this behalf, after giving twenty-four hours' notice to the occupier, or, if there be no occupier, to the owner, of any building or land, may at any time between sunrise and sunset—

Other powers of entry on buildings or land.

(*a*) enter on and survey and take levels of any land ;

(*b*) enter into any building or on any land for the purpose of examining works under construction, of ascertaining the course of drains or of executing or repairing any work which it is by this Act empowered to execute or maintain.

(*c*) enter, inspect and measure any building or land for the purpose of valuation.

32. When any building used as a human dwelling is entered under this Act, due regard shall be paid to the social and religious sentiments of the occupiers, and before any apartment in the actual occupancy of any woman, who according to custom does not appear in public, is entered under this Act, notice shall be given to her that she is at liberty to withdraw, and every reasonable facility shall be afforded to her for withdrawing.

Precautions to be observed in entering dwellings.

CHAPTER V.

Powers for making Rules.

33. The Government may, after previous publication in accordance with section 7 of the North-Western Provinces and Oudh General Clauses Act, 1887, make rules consistent with this Act—

Rules by the Government.

(1) as to the preparation and submission by the Municipal authority of plans, estimates and specifications for a drainage scheme, and as to the agency by which they shall be prepared and the work carried out ;

(2) as to the size and nature of the drains and other works which a Municipal authority may construct under Chapter II;

(3) as to the size and nature of the works which owners and occupiers may be required by Municipal authority to construct under Chapter III ;

(4) as to the agency to be employed by any person in executing any work under this Act, and as to prohibiting the employment of any other agency.

(5) as to the issue and service of notices under this Act or the rules made under it ; and

(6) generally as to the powers and duties of the Municipal authority under this Act.

(34) The Municipal authority may from time to time at a special meeting, with the sanction of the Government and after previous publication as aforesaid, make rules consistent with this Act—

Rules by the Municipal authority.

(1) as to the regulation and control, in any matter not specifically provided for by rules under section 33, of drains, ventilation shafts and pipes, water-closets, privies, latrines, urinals, cess-pools and other drainage works, in respect of their construction, alteration, maintenance, preservation, cleansing and repair ;

(2) as to the regulation or prohibition of the discharge into drains or deposit therein of sewage, sullage, polluted water and other offensive or obstructive matter ;

(3) as to the regulation or prohibition of the construction of streets, buildings, walls or other structures over municipal drains and of the alteration and removal thereof.

(4) as to the collection and removal by municipal or private agency of sewage from private premises to the basins or other receptacles established by the Municipal authority in connection with the Municipal drains ;

(5) as to the appointment by owners of buildings or lands in the Municipality, who are not resident in the Municipality, of persons residing within or near the Municipality to act as their agents for all or any of the purposes of this Act or any rule thereunder ; and

(6) generally as to carrying out the purposes of this Act.

35. (1) The Government, in making any rule under clauses (3) and (4) of section 33, and the Municipal authority in making any rule under section 34, may direct that a breach of it shall be punishable on conviction by a Magistrate with fine which may extend to fifty rupees, and when the breach is a continuing breach, with a further fine, which may extend to five rupees for every day after the first during which the breach continues.

Breach of rules.

(2) In lieu of, or in addition to, such fine, the Magistrate may require the offender to remedy the mischief (if any) so far as is within his power.

CHAPTER VI.

Offences.

36. Whoever in contravention of any rule made, or direction or condition specified under this Act makes or causes to be made any connection of a drain belonging to himself or to some other person with any Municipal drain, shall be punishable with fine, which may extend to fifty rupees.

Penalty for making unauthorized connections with Municipal drains.

37. Whoever disobeys any awful direction given by the Municipal authority by public notice, or any written notice lawfully issued by it, or fails to comply with the conditions subject to which any permission was given by the Municipal authority, shall, if the disobedience or omission is not an offence punishable under any other section, be punishable with fine, which may extend to fifty rupees, and in the case of a continuing breach, with a further fine which may extend to five rupees for every day after the first during which the breach continues :

Penalty for disobedience of orders of the Municipal authority.

Provided that when the notice fixes a time within which a certain act is to be done, and no time is specified in this Act, it shall rest with the Magistrate to determine whether the time so fixed was a reasonable time within the meaning of this Act.

38. Whoever obstructs or molests any person employed by, or under contract with, the Municipal authority under the Act in the performance of his duty, or in the fulfilment of his contract, or removes any mark set up for the purpose of indicating any levels or direction necessary to the execution of works authorized by this Act, shall be punishable with fine, which may extend to fifty rupees.

Penalty for obstructing persons employed by the Municipal authority in their duty.

CHAPTER VII.

SUPPLEMENTAL.

Acquisition of land.

39. Where any land, whether within or without the limits of the Municipality, is required for the purposes of this Act, the Government may, at the request of the Municipal authority, proceed to acquire it under the provisions of the Land Acquisition Act, 1894: and on payment by the Municipal authority of the compensation awarded under that Act, and of the charges incurred by the Government in connection with the proceedings, the land shall vest in the Municipal authority.

Execution of acts required to be done by any notice.

40. (1) When any notice under this Act requires any act to be done for which no time is fixed by this Act, it shall fix a reasonable time for doing the same.

(2) Whenever it is provided by this Act that any such notice may be given to the owner or occupier of any land or building, and the owner and occupier are different persons, such notice shall be given to the one of them primarily liable to comply with such notice, and in case of doubt to both of them:

Provided that in any such case, where there is no owner resident within the Municipality, the delivery of such notice to the occupier shall be sufficient.

(3) Whenever the terms of any such notice have not been complied with, the Municipal authority may, after six hours' notice, by its officers, cause the act to be done.

Recovery of costs of execution.

41. (1) Where, under this Act, the owner or occupier of property is required by the Municipal authority to execute any work, and default has been made in complying with the requirement, and the Municipal authority has executed the work, the Municipal authority may recover the cost of the work from the person in default.

(2) As between themselves and the Municipal authority both owner and occupier shall be deemed to be in default for the purposes of this section, but that one of them shall be deemed to be primarily in default, upon whom, as between landlord and tenant, the duty of doing the required act would properly fall either in pursuance of the contract of tenancy or by law.

(3) When the person primarily in default is the owner, and the Municipal authority has recovered the whole or any part of the cost from the occupier, or he has paid the same upon its demand, he may deduct the sum so recovered or paid from the rent, from time to time becoming due from him to the owner, or otherwise recover it from such owner:

(4) Provided that no occupier shall be required to pay under sub-section (3) any sum greater than the amount for the time being due from him to the owner, either in respect of rent due at the date of such demand as aforesaid or thereafter accruing, unless he has refused on application to him by the Municipal authority truly to disclose the amount of his rent and the name and address of the person to whom it is payable.

The burden of proving that the sum so demanded by the Municipal authority from the occupier exceeds the rent due at the time of the demand, or which has since accrued due, shall lie on the occupier.

(5) Nothing in this section shall affect any contract between an owner and an occupier.

(6) In this section the "cost of the work" includes any compensation paid by the Municipal authority under section 42.

Compensation out of Municipal fund.

42. (1) The Municipal authority may make compensation out of the Municipal fund to any person sustaining any damage by reason of the exercise of any of the powers vested in the Municipal authority, its officers and servants, under this Act, and shall make such compensation where the person sustaining the damage was not himself in default in the matter in respect of which the power was exercised.

(2) If any dispute arises touching the amount of any compensation which the Municipal authority is required by this Act to pay for injury to any building or land, it shall be settled in such manner as the parties may agree, or, in default of agreement, it shall be referred to the Collector for decision.

(3) Any person dissatisfied with the Collector's decision may within three months of the date thereof institute a suit in the Civil Court. Subject to the result of such suit, if any, the Collector's decision shall be final.

Appeal by Railway Administration.

43. (1) A Railway Administration, aggrieved by any order of a Municipal authority under the powers conferred on it by this Act, may appeal within thirty days from the date of such order to the Government, which may confirm, set aside or modify the order appealed from.

(2) The Government may, if it shall think fit, extend the period allowed by sub-section (1) for appeal.

(3) When an appeal has been instituted under sub-section (1) against an order of the Municipal authority, all proceedings to enforce such order shall be suspended pending the decision of the appeal.

Authority for prosecutions.

44. Prosecutions under this Act, or the rules made under it, may be instituted by the Municipal authority, or any person authorized by it in this behalf, and not otherwise.

Recovery of arrears due to the Municipal authority.

45. Any sum due to the Municipal authority under this Act on account of the expenses of any work executed, or of any measure taken or thing done by or under the order of the Municipal authority, may be recovered either by suit or on the order of a Magistrate having jurisdiction within the limits of the Municipality, or in any other place where the person from whom the money if claimable may for the time being be resident, by the distress and sale of any movable property within the limits of his jurisdiction belonging to such person.

Disposal of fines.

46. All fines realized under this Act shall be placed to the credit of the general Municipal fund.

Delegation of powers.

47. A Municipal authority may, at a special meeting, delegate to one or more of its members, by name or by office, any of the powers vested in it by sections 12, 15, 20, 21, 22, 23, 26 and 27.

APPENDIX E.

ACT No. XIX OF 1889.

An Act to make better provision for sanitation in Villages in the Central Provinces.

WHEREAS it is expedient to make better provision for sanitation in villages in the Central Provinces; It is hereby enacted as follows:—

Title, extent and commencement.

1. (*1*) This Act may be called the Central Provinces Village-Sanitation Act, 1889.

(*2*) It extends to the territories for the time being administered by the Chief Commissioner of the Central Provinces; and

(*3*) It shall come into force at once.

Conditions under which the provisions of this Act may be extended to a village.

2. (*1*) When the sanitary condition of a village containing not less than one hundred inhabited houses and not being a Municipality is, in the opinion of the Deputy Commissioner of the District in which the village is situate, such as to be injurious to the health of the inhabitants, he may, by an order in writing, published in such manner as the Local Government may by rule prescribe, declare that the village is in an insanitary state.

(*2*) After the publication of the order, the Local Government may—

(*a*) on the application of the mukaddam and ten or more other inhabitants of the village, or,

(*b*) if no such application is made within three months after the date of the publication of the order, on the application of the Deputy Commissioner, by Notification in the official Gazette, extend to the village the provisions of this Act from such date as may be specified in the Notification.

Election of village-panchâyat.

3. In every village to which this Act is extended a panchâyat shall be formed, consisting of the mukaddam and such number of representatives of the village-community, not being less than four, as the Local Government may by rule prescribe, who shall be chosen by election from among the inhabitants of the village.

Powers of the panchâyat.

4. The panchâyat shall, subject to the approval of the Deputy Commissioner, determine the sum which is annually required for the following purposes:—

(*a*) the proper cleansing and conservancy of the village;

(*b*) the provision and maintenance of a supply of wholesome water for the inhabitants of the village and their cattle;

(*c*) the maintenance of the roads in the village.

Mode of raising funds.

5. (*1*) The sum determined to be necessary under the last foregoing section shall be raised by the panchâyat by an assessment on the houses and lands within the village with reference to the circumstances of, and property possessed by, the owners or occupiers of such houses and lands.

(*2*) An assessment shall not be valid until it has been sanctioned by the Local Government.

Powers of Local Government to make rules.

6. (*1*) The Local Government shall make rules—

(*a*) defining the limits of villages for the purposes of the Act;

(*b*) regulating the mode of election and the proceedings of the panchâyats, the term of office of members of a panchâyat and the circumstances under which, and the authority by whom, they may be removed;

(*c*) limiting the amount of tax and regulating its assessment, realization, safe custody and application, and the auditing of the accounts thereof;

(*d*) regulating the village-conservancy and defining and prohibiting public nuisances; and,

(*e*) generally, for giving effect to the purposes of this Act.

(*2*) The Local Government may, in making such rules, direct that the breach of any provision thereof shall be punished with fine, which may extend to ten rupees.

(*3*) Arrears of taxes imposed under this Act may, subject to the rules, if any, made under this section, be realized by the Deputy Commissioner as arrears of land-revenue.

Withdrawal of Act.
I of 1883.

7. The Local Government may direct that the provisions of this Act shall cease to have operation in any village from a date to be fixed by the Local Government, and may make over any moneys in the hands of the panchâyat to the District Council or Local Board having authority under the Central Provinces Local Self-Government Act, 1883.

Exclusion of authority of District Council and Local Board.
I of 1883.

8. While the provisions of this Act are in force in any village, the authority of the District Council or Local Board under section 9 of the Central Provinces Local Self-Government Act, 1883, shall be suspended in respect of all matters made over to the management of the panchâyat.

APPENDIX F.

Rules for Village Sanitation in Burma.

Notification by the Commissioner No. 33, dated 30th August 1895.

Under the provisions of section 5 (*l*) of the Upper Burma Village Regulation the Commissioner of the Eastern Division, with the sanction of the Local Government, frames the following rules regarding Village Sanitation in the Kyauksè, Meiktila, Yamèthin, and Myingyan districts in the Eastern Division.

1. The headman shall not allow any house or land in any village under his control to be, or to be kept, in a filthy or insanitary condition, or to be overgrown with weeds or rank vegetation.

2. The headman shall not allow the corpse of a human being, unless embalmed or unless enclosed in an air-tight coffin, to be kept unburied or uncremated for more than 48 hours on any house or land in any village under his control, without the special sanction in each case of the Civil Surgeon, Subdivisional Officer, or Township Officer: Provided that between the first day of November and last day of February inclusive corpses may be kept unburied or uncremated for 72 hours.

3. The headman shall not allow the corpse of a human being who has died of cholera, smallpox, or other infectious or contagious disease, to be kept for more than six hours unburied or uncremated on any house or land in any village under his control.

4. The headman shall not allow the burning or burying of the corpse of a human being in, or the depositing of the same at, any place in any village under his control, except a public burial-ground, or a place set apart for that purpose by the Township Officer.

5. The headman shall at once send a report to the nearest police-station or outpost of the occurrence in any village under his control of cholera or smallpox, if two cases occur in close succession.

6. When a corpse is interred, it shall be buried at a depth of at least 5 feet, and not within 30 yards of any well, tank, or stream, or of any dwelling-house; and the headman, exercising control over the village where the interment takes place, shall be bound to satisfy himself that this is done.

7. The headman shall not allow any latrine or cess-pit on any house, enclosure, or land in any village under his control to be kept in a filthy or insanitary condition. Cess-pits should be closed periodically.

8. The headman shall set apart in each village under his control one or more wells for drinking purposes and shall cause to be constructed round each well either a parapet 2 feet high or a substantial hedge, and shall not allow bathing or washing of clothes within 10 yards of any such well, and shall not allow the ground within 10 yards of such well to be defiled by filth, rubbish, or otherwise. If the water-supply is from tanks, the headman shall reserve one tank for drinking purposes only, shall keep clean the banks thereof, and shall not allow bathing, washing of clothes, or watering of cattle in it.

9. The headman shall take measures in order that all latrines and cess-pits in each village under his control may be screened by sufficient walls from the view of passers-by or persons residing in the neighbourhood.

10. The headman shall cause the streets and lanes in each village under his control to be kept free from weeds, in good order, and in a sanitary condition.

11. The headman shall mark out a place near—but outside—each village under his control, where rubbish may be deposited, and shall cause the rubbish to be burnt or worked into the land at ploughing time.

12. The headman shall not allow a new house to be built in any village under his control within 20 feet of the front or back, or 6 feet of the side, of any existing house.

Directions regarding the prevention of fire.

1. The headman should advise each house-owner or occupier in each village under his control to maintain two hooked bamboos, two fire-beaters, and pots filled with water in number corresponding to the front posts of such house. But he cannot legally punish persons who neglect to take his advice in this matter.

2. The headman should see that fires or lights are not ignited, handled, or used in any village under his control in such a manner as to be dangerous to life or property. In really serious cases, or where a fire results from careless action on the part of any of the villagers, he should send a report of the matter to the nearest Magistrate or Police Officer.

APPENDIX G.

VILLAGE SANITATION IN INDIA.

By Deputy Surgeon-General T. G. Hewlett, C.I.E.

Among other questions which affect the welfare of the 200 millions of Her Imperial Majesty's subjects in India there is none of greater urgency, or which demands more earnest attention, and at the same time more careful handling, than the introduction of Sanitary Reform into the villages. The necessity for this measure is apparent, even to the most casual visitor to the country; but although earnest representations on the subject have, during the last 20 years, been repeatedly made, as well by the Army Sanitary Commission in England as by the Officers of the Sanitary Department in India, it has not, until quite recently, attracted much attention, even from Government, and still less from the general public.

The fact is that Government has not cared, and wisely so, to take this important question up, until the people themselves showed that they felt the need of sanitation, and this, owing to the spread of education, they are only just beginning to do, and that by no means, at present, generally. Nor is such ignorance on the part of the villagers to be wondered at, when it is remembered that from time immemorial Village Life in India has gone on in one fixed groove, which nothing seemed to alter: wars and tumults might sweep over the land and be followed by their gaunt handmaids Famine and Pestilence, but the villagers who survived their ravages did not perceive the lessons they taught, and resumed their slow life and passed their days in the same immobile way as their forefathers through countless generations had done before them.

But the exigencies of those turbulent times, which preceded the era of British rule, required as a measure of safety, and in order to guard against the incursions of bands of predatory dacoits, that not only should each village be, if possible, surrounded by a high mud wall, but that the streets inside it should be narrow, and that the walls of the houses facing them should have no external openings through which a midnight marauder might force his stealthy way, whilst the houses were crowded together so that mutual assistance might be the more quickly rendered, and customs regarding the performance of the offices of nature, etc., were established which are and must ever have been most dangerous to health. The result is that now when the *Pax Britannica* has spread throughout the land—when there is no danger, as in the old days, in going outside the village enclosure, the habits ingrained by the practices of thousands of years cannot be eradicated in a day, and the absence of cleanliness is not recognized by the villagers as an evil, any more than the necessity for fresh air or light in the dwelling is felt by them, and they see nothing wrong in living under conditions which are utterly opposed to all sanitary teaching and experience.

It will be impossible in a pamphlet of this kind to give a detailed description of all the debasing conditions in which the rural population at present habitually, and I fear I must add contentedly, lives. Suffice it to say that the ground-surface of every village in India, as well within the habitable area as without, is everywhere loathsomely foul; that the drinking water-supply is too frequently polluted, and that the very air is tainted by sickening emanations from human ordure, offal, filth of all kinds and misplaced trade processes; that there is no drainage; that the subsoil is not only impure, but damp; that, in fine, almost every sanitary fault exists that could exist; and that every law of decency and of health is grossly violated. This is no exaggerated description of actual conditions to be seen in every village, and when the imagination really grasps what these mean, neither wonder nor astonishment can be felt that such a persistent defiance of the laws of Nature is followed by the outbreak of the most terrible epidemics of cholera and small-pox; whilst bowel complaints are rife, and fevers, produced by the impure, undrained, and consequently very damp condition of the subsoil around habitations are of an extremely malignant and deadly type, and annually slay their hundreds of thousands of victims. As might be expected, the waste of infant life is also in such conditions literally appalling. In one town in the Bombay Presidency I could name, in 1886—an exceptionally healthy year when there was no cholera or small-pox in movement—the death-rate among infants under one year of age reached the excessive rate of 462 per 1,000, so that nearly half the children who were born died before they were a year old, whilst in another it actually amounted to 617 per 1,000!! The cause of these deaths was traced to insanitary conditions, and indeed no fact has been more clearly demonstrated than that the heavy mortality, which year by year takes place, is, for the most part, entirely preventable.

Foreign Nations undoubtedly view the insanitary conditions of the towns and villages in India as a standing danger to the civilized world; but their action with the view of preventing what they consider possible, *viz.*, the importation of cholera into Europe, is based on entirely erroneous principles, for cholera is not a contagious disease, nor can it be carried about by persons; but instead of taking effective sanitary measures, and thereby rendering the introduction of any filth poison into their maritime or other cities a matter of impossibility, they are dominated by panic and try to save themselves from the results of their own want of cleanliness by imposing quarantine on all vessels arriving at Suez from India; and this principle is carried to such an outrageous extent

that they do not even differentiate between epidemic seasons and times when the disease is at its minimum intensity; for even in a year like 1886, during which there were only 17 deaths from cholera in the City of Bombay, all vessels arriving at Suez from that Port were at certain seasons of the year placed in quarantine!

The Government of India has, however, at length taken the subject up in earnest, and a Resolution in the Home Department (Sanitary) No. $\frac{3}{212\text{-}225}$, dated 27th July, 1888, deals with the whole question in a comprehensive spirit, and evinces a most just appreciation of its importance. It points out that "the main obstacles which have hitherto impeded sanitary improvement in India lay in the ignorance of the masses and their dislike to any change of custom, and the want of efficient executive agencies, and last, though not least, in the want of funds," and states that although their assistance and co-operation are essential, "district officers have neither the time nor the technical knowledge, nor the opportunities requisite for a comprehensive survey of the entire field of activity which is necessary for initiating and carrying approved sanitary measures into effect," and it therefore appears to be eminently desirable "that there should be established in each province a Sanitary Board, through which the Local Government can operate, and to which, subject in all respects to the orders of the Local Government, shall be entrusted the control and supervision over sanitary works, whether undertaken in urban or rural areas," and these Sanitary Boards are not only to be recognized "as a Consultative Body but also as the executive agency through which the Government acts in the Sanitary Department." The Resolution then refers to the orders issued by the Home Department on Municipal and Local Board Reports for 1885-86, which laid down that "a sanitary survey of each municipality and rural area should be undertaken, and that plans and estimates should be prepared of all the improvements necessary to provide each town or village with an efficient system of water supply, drainage, and conservancy," and further orders "the provision in every province of simple rules for the regulation of Village Sanitation," and says "It is now in contemplation to render such rules more efficient by legislation. Whenever the existing law makes no provision or insufficient provision for the enforcement of necessary sanitary measures in rural areas, there should be no hesitation in taking the necessary power by legislation," and it calls "attention to the valuable remarks made in 1879 by the Army Sanitary Commission on the practical application of sanitary principles to towns and villages in India."

Speaking as an Officer, who was one of the first pioneers of sanitary reform in India, and who has had much practical sanitary experience in that country, I cannot over-estimate the immense importance of such an enlightened Resolution, and I think I am not taking too sanguine a view when I say that the above orders of the Government of India, if they are carried out in the same spirit as they have been conceived, will to the utmost certainty produce results which will not only astonish the world, but will benefit the natives more materially than any of the many blessings already conferred on them by English Rule.

As I have retired from the Service it is no longer my privilege to address Government in an official capacity, but my long experience in the Sanitary Department in India emboldens me to offer some suggestions which I hope may be useful, both as regards the principles, which in my opinion would, if followed, ensure the success of an Act to provide sanitation in the villages in India, and also with reference to what is absolutely important, *viz.*, the provisions which the Village Rules, if they are to have any practical effect on the public health, ought to contain.

It will be observed that the Government of India lays stress on the ignorance of the masses, and their dislike to any change of customs, as being among the formidable obstacles to sanitary reform in India. It therefore seems to me to be most absolutely essential that a Sanitary Act should comprise more than a dry exposition of the law, and it is my strongest opinion that in order to set the minds of the rural population at rest regarding the intentions of Government, it should define in plain and unmistakeable language the purposes for which the Act is passed, and especially the Village Rules should be drawn up in such a way as to instruct the people and show them exactly what the Government wishes them to do, as well as exactly what it forbids them to do.

It must also be remembered that any Sanitary Act in its endeavour to raise the people out of their present debased conditions, and to make them exchange their filthy habits for those in accordance with the demands of decency and health, must contain provisions which must necessarily interfere with their established customs, and consequently with their comfort. It must, for example, provide a cleansing establishment which must invade, if not the interior of the house, at least its environments. Now speaking from my experience as the first Health Officer of Bombay, where it was my duty to organize the Health Department in that City and to put into force the provisions of the first Municipal Act, I know that this procedure on its first introduction must necessarily create a certain amount of irritation, and that a certain amount of odium will attach itself to any Government official who works it; for I found at first that this Act was extremely distasteful to the people, as they did not understand what our action meant, or that we were working for their own good, and they regarded the enforcement of measures so foreign to their habits, and our not permitting them to follow the traditions of their forefathers as an act of *zoolum* on the part of the Government. Now what took place in Bombay is perfectly certain to occur up-country, and in an intensified form, because there cannot there be European supervision to enquire into every case of complaint made against the Cleansing Department; and though no one is more anxious than I am to see sanitation introduced into the villages in India, yet I say deliberately, and with all the force I can, that I would rather see things go on as they are, than that a Coercive Act to effect this object should be passed, especially if it is to be worked by Government officials, for such a procedure would, I am convinced, ensure the failure of any hope of effecting the one great object of my life, and indeed, such an Act, if honestly worked, would create so much irritation among the rural population, that it could not fail to cause serious uneasiness to Government.

I should not speak so decidedly if I had not the strongest grounds for so doing, but when in India I mixed much with villagers, and know, at least those in the Presidency of Bombay well, and what they think and feel about the matter; I always encouraged them to speak out openly, which they did much more freely than if I had been an Officer of the Revenue Department, and I very respectfully but very emphatically warn the Government, what my experience teaches me must ensue, if any such measure is passed. The rural population in the Presidency of Bombay at all events is easy to lead, but it will not be driven, and any attempt to *force sanitation* on them will, I am convinced, be followed by widespread discontent, and the people will be brought to the very verge of disloyalty.

Surely, from every point of view, it would be better that the villagers should be systematically taught to identify themselves with the Government in this matter, and this can only be done by explaining to them the necessity for the movement and by giving them a direct interest in its working. Such action is in present circumstances the more especially needful, as the villagers know quite well that the boon of local self-government has been bestowed on all municipalities throughout India, and they would naturally and justly ask why if it is right for the urban, it should not be conceded to the rural population, especially when they know that many of the so-called towns are no bigger or more influential than many of the villages. Such a question would be difficult to answer, for as far as I know there is no reason why every village in India, of course under proper and efficient safeguards, should not be allowed to manage its own local affairs as regards sanitation.

I am convinced that no movement would be more in accord with native traditions than if the Government were pleased to grant the people in each village power to elect their own Punchayet, which would thus be a really representative body, and which would, after a short time, learn to manage, under the direction of the Sanitary Boards, their own sanitary affairs. This is no new proposal, as the Madras Local Board's Act of 1884 already provides for the establishment of Village Panchayats, the members being either wholly appointed by

Government, or partly elected by the tax-payers. If this concession were made by Government, it would be the one best calculated to allay the suspicion with which the rural mind always invests anything strange or new, and it would at once disarm them, and restore their confidence in the good and paternal intentions of the Government, and besides it would transfer the odium I have spoken of from the Government to the elected representatives of the people. Of course the Act of Village Rules would carefully define the mode of election and the duties of the Panchayat, etc. The position of its members would be one conferring dignity, and one which respectable villagers would be anxious to attain, especially if Government were pleased to confer on each Panchayatdar a distinctive title during his tenure of office, or if it sanctioned a dress of honour being bestowed on the Chairman, of that Panchayat whose village at the time of Jamabandi was found to be the cleanest in the Taluka.

To the Panchayat also would be entrusted the most important and delicate duty of raising in any manner which might be agreed upon by a majority of the villagers, in conclave assembled, and subject of course to the approval, or veto of Government, funds, sufficient to pay the wages of the village menial servants, whose services would be placed under their command, and to purchase carts, brooms, etc., etc.

The raising of funds in India is always a ticklish matter, but the course I so strongly recommend would cause much less irritation, than if Government were to order the Collector to levy a rate to meet the necessary expenses, for in that case there would be an immediate outcry that it was imposing additional taxation, and great and widespread discontent would be caused. There are, in the Bombay Presidency, at least three villages where the villagers elected their own Panchayats, who with the consent of the majority imposed a house-tax on themselves to meet the expenditure necessary to keep the village clean. In one of these this movement was entirely spontaneous, without any pressure whatever being put on the villagers by any Government official—and in my strongest opinion the example thus set by the natives themselves should be followed by Government in introducing an Act for Village Sanitation. Surely this course would be far more politic in every sense, than that Government should attempt to do the work itself, either through the agency of its own officers, or through villagers appointed by Government, whom the people would know were controlled by the irresistible power of the Collector. Such a course would be most unpopular, and I also know that the people hate and dread any interference with their local affairs on the part of the Magistracy, as would be the case if Magistrates were placed on Village Committees, etc. It is, moreover, I respectfully submit, most unwise and unfair that the same man should occupy the position of accuser and judge. As an old Health Officer I can speak most decidedly as to the paramount importance of having an impartial judge to decide cases between the accused and the servants of the cleansing establishment; and in my judgment it would be far better to enlarge the powers already conferred by, for example, Bombay Act VIII of 1867 on the Village Patel, and to make him the Village Magistrate, to try all cases of offences against the Village Rules, and I would suggest as the surest means in my experience of getting sanitary work done, that he be empowered to inflict a continuing penalty, however small the amount, for every day after the date fixed by the notice had expired, and during which the nuisance remains unabated. Let the accused by all means have the right to appeal from his decision to the Mamlutdar, or the District Magistrate, and consequently to the High Court. Such a procedure would be in strict accordance with established law and custom. Then it is most essential that the Government should have the power, through such agency as it may be pleased to determine, to inspect the work of the Panchayat and their servants, and to see that they really do their duty, and that the provisions of the Village Rules, especially as regards water-supply, drainage, and conservancy, are efficiently carried out, and by all means introduce what in the existing Municipal and Local Board Acts are popularly designated "The Bludgeon Clauses," and let the Act give Government full power, on default being proved against a Panchayat, to suspend it, and to perform what is necessary at the expense of the villagers.

It must never be forgotton that Government may pass what Acts it pleases to enforce sanitation in the villages, but unless the people themselves co-operate to give effect to their provisions, they will remain a dead-letter, except, as I cannot conceive nowadays to be possible, actual force is used to compel their adoption; but a Sanitary Act embodying the principles I advocate would afford the best chance of practical sanitation, being at length really introduced into the Villages of India, as it would be administered by the people themselves without direct interference on the part of Government, but under its advice and counsel.

Doubtless, difficulties would and must be met with at first, but under the judicious and kindly management which Government would assuredly exercise, these would soon be overcome, and in any case the experiment—for any move in this direction must at first be an experiment—is worth trying, for if it succeeds it must surely be conceded that it is better than any other plan; and one that would at least not excite the opposition of the masses.

Having thus stated the principles which, in my strongest opinion, it would be well to adopt, in framing a Sanitary Act for India, I pass on to the consi deration of the Village Rules.

In the orders of the Government of India above quoted, it will be observed that each village is to be provided with "an efficient system of water-supply, drainage, and conservancy." This can only mean that the system is to be such as will prevent disease and improve health, for if it does not accomplish this it cannot be "efficient." The problem then, which faces us, and which must be solved, is, first: What system of practical sanitation in the villages will be efficient, *i. e.*, sufficient to prevent cholera and the other malignant fevers which at present cause such a very heavy mortality in them? and when this point has been decided, the further question arises,—Is it possible to carry them out?

The following Rules to introduce sanitation into villages in India embody the observation and experience of a life-time, and I am convinced if the measures taken to give effect to the suggestions of the Government of India are to be efficient, that there is not one single rule in them which can be safely omitted, and I am equally confident that it is perfectly feasible to carry out in the villages the provisions of each Rule. I think I may claim that they embody the suggestions of the Army Sanitary Commission, and that they contain clear and definite instructions, as it is so vitally important that they should, and that they show the villagers exactly what they are to do, as well as what they are forbidden to do.

I have endeavoured also to instruct them and to explain the reason for each rule. In some instances the rule exhorts rather than compels, and several things are allowed, out of deference to native customs and prejudices, which perhaps, strictly speaking, ought to have been forbidden. The penalties spoken of in several sections are not specified, as of course they would be included among the sections of the Act. It may be said that the Rules are too long, but they necessarily embrace very many points, and deal with some of the most prominent wrong conditions, commonly met with in villages, which affect, and destroy health, and which, if any practical good is to follow, must be clearly stated. I know, as an old Health Officer, who has seen perhaps more cholera than most men, that it is simply idle to expect that it or the other intense fevers of India can be eradicated by *half measures*, and in my opinion it would be better to let things go on as they are, than to enact Rules which do not strike at the root of the wrong conditions, and which do not deal with the causation of disease.

I have added a preamble, as I am convinced that some such preface would be really useful in allaying distrust on the part of the rural population. These Rules are intended to apply to all villages containing more than 500 inhabitants, as in them will be found a sufficiently intelligent community to appreciate their value. It must be remembered that many of our so-called villages are in reality towns, containing more than 5,000

and some more than 10,000 inhabitants. At the same time they can, with perfect propriety, be applied to villages containing between 200 and 500 inhabitants, whilst for villages with a population under 200, which usually consists of a collection of huts occupied by Bhils, hill men, etc., etc., the Sanitary Board of the Province might draw up simple regulations, principally prohibitions, to ensure the conservation of the water supply, the cleanliness of the surface close to the huts, and to compel the villagers to go to selected places for the purposes of nature. I have also incorporated in the Village Rules some simple instructions regarding the action required to be taken during outbreaks of cholera, which I drew up, whilst Sanitary Commissioner of Bombay, for the information and guidance of the village officers, and which were approved by Government and circulated throughout the Presidency.

DRAFT VILLAGE SANITATION BILL.

PREAMBLE.

Government having taken into its most earnest consideration the very heavy mortality which year by year takes place among the rural population, and finding that it is due to the extreme prevalence of disease, especially of fevers, bowel complaints, and, in some years, of cholera and small-pox in the villages, has been pleased to determine that, in the interests of the rural population committed to its charge, the serious state of things can no longer be permitted to continue; and as this excessive death rate has been clearly traced to the filthy conditions in which the villagers live, and is principally caused by the rubbish, dirt, and filth which have been allowed to accumulate in the back yards, and by the sides and fronts of the houses they inhabit, as well as by the too frequent impurity of the water they drink, and by the other unwholesome matters which are so commonly met with in villages, it has therefore resolved that, for the future, cleanliness must be maintained in all villages, and that the surface and surroundings of each village to which this Act is applied, must be daily cleansed, and that the waters-upply must be improved, and that such other measures as may be determined upon must be taken with the view of improving the health of the villagers; and in furtherance of this object Government is pleased to publish Rules, which will clearly explain to the villagers exactly what they have to do and what they are forbidden to do.

Government believes that in this its endeavour to benefit the rural population, it will have the support and assistance of all right-thinking persons, and has therefore resolved to grant to the villagers the boon of Local Self-Government, which the Most Noble the Marquess of Ripon, when Viceroy, bestowed upon all Municipalities throughout India. Government will therefore permit the villagers to elect from among themselves a Panchayat for each village, whose duty it will be to see that the provisions of this Act and of the Village Rules are properly and efficiently carried out. The members of the Panchayat will thus be in a position of great trust and responsibility, as it will also be their duty to raise funds, subject to the approval of the Government, in any way that may be decided by a majority of the villagers, so as to pay the establishments, etc., necessary to keep the village clean, and to meet the expenditure entailed by this Act.

VILLAGE RULES.

CHAPTER I.

RULES TO PROVIDE FOR THE SELECTION AND MANAGEMENT OF PLACES TO BE SET APART.—1ST, FOR THE USE OF THE VILLAGERS AS PLACES OF RESORT FOR NATURAL PURPOSES; 2ND, FOR THE DEPOSIT OF ALL RUBBISH, DIRT, GARBAGE, FILTH, OTHER THAN NIGHT-SOIL, COLLECTED IN THE VILLAGE; 3RD, FOR THE BURIAL OF THE CARCASES OF DEAD ANIMALS.

1. Subject to the approval of such officer as Government may be pleased to appoint, the Panchayat shall set up boundary-marks round, but not nearer than 250 yards to, the village, within which no deposit of any kind of filth shall be allowed. It shall also select at least three sites for the undermentioned purposes, which shall be outside the boundary-marks, and at the distances hereafter named. These sites shall be to leeward, and, in the Bombay Presidency, if possible, to the south of the village.

Boundary-marks not nearer than 250 yards to the village to be set up all round it, and no filth to be deposited within this boundary. Sites to be selected for the performance of the offices of nature, the deposit of filth and rubbish, and the burial of the carcases of dead animals.

2. The first site shall not be nearer than 250 yards to the village, and shall be assigned for the use of the villagers as a place for resort for the performance of the offices of nature. If the village is a very large one, it may be necessary to allot more sites for this purpose, so that the villagers should not have too far to walk to relieve themselves. Each site shall be divided into two portions, one for men and the other for women; or, if preferred, two separate sites may be allotted, one for each sex. The area must necessarily depend on the size of the village, but the boundary of each site shall be enclosed by a thick bramble hedge or wall, and care must be taken, either by the use of turnstiles or other convenient arrangements, to ensure the exclusion of cattle from the interior of the site, the approach to which should be marked out by stones which have been limewhited, so as to be readily distinguishable at night.

Site or sites for natural purposes.

3. After the site or sites have been provided, it should be notified that any villager caught easing him or herself in any street, thoroughfare, or anywhere inside the village, or within the boundary-marks, except in an authorized privy, shall be dealt with as hereafter provided.

When places of natural resort are provided, anyone who performs the offices of nature in the village or within the boundary-marks will be punished.

4. If the surface of the soil will admit of it, a trench one foot deep by one foot wide, and as long as required, shall day by day be dug by the village menial servants within the enclosure at each site. Every person, after using it, shall draw with a phowra, or kick with his foot, a little earth over what has come from him, and when the site has been completely trenched over, a fresh plot of ground must be selected and treated in a similar way, and the former site must be ploughed up crosswise, and be planted with crops. The cultivation of the manured field is an essential part of this scheme, as growing plants rapidly assimilate the manure, and the ground will again become sweet, whilst the crops from these fields will be far more luxuriant than those grown on fields which have not been thus manured.

How the site set apart for natural purposes is to be treated.

5. If there are any privies, either public or private, in the village, their contents as well as all the night-soil collected in it, shall be daily brought to a trench and covered over with a layer of fresh earth.

All night-soil collected in the village to be daily buried in a trench.

Method of disposal of night-soil in places where the soil does not admit of trenches.

6. In places where the soil will not admit of trenches being dug in it, the villagers must perform the offices of nature on the bare ground; but as soon as they have retired, the village servants shall throw over the night-soil the ashes of burnt village sweepings, or which have been collected from the chullas in the village, or, in their absence, shall cover the night-soil with fresh earth, so as to make it into a solid compost, which they shall afterwards convey to a selected field for burial; but if there is no place where it can be buried within a reasonable distance of the village, it should be carted away to a waste place and deposited on the ground, but not near a water-course, and not nearer than one mile to leeward of the village.

A site to be selected for all filth other than night-soil collected in the village.

7. The Panchayat shall also select a second site, which shall not be nearer than 450 yards to the village, to which shall be brought all the liquid and solid filth other than night-soil, rubbish, stable litter, manure, etc., etc, collected in the village, and which shall be there deposited.

Plots of ground inside this enclosure may be assigned to individual villagers for temporarily stacking manure.

8. The Panchayat may, if it consider it desirable, allot to individual villagers a plot or plots of ground within the enclosure of this site, for the purpose of storing thereon stable litter or other manure belonging to them, before it can be carted to their fields.

Site for burial of carcases of dead animals.

9. The Panchayat shall also select a third site, which shall not be nearer the village than 450 yards, to which the carcases of all animals which die in it shall be brought, to be there buried under not less than 6 feet of earth.

These sites are *not* to be on high ground,

10. Great care must be taken that the places set apart for the performance of the offices of nature, for the deposit of filth other than night-soil, and for the burial of the carcases of dead animals, are *not* situated on high ground—or near any *nala* discharging into a source of drinking water. This is most important, because otherwise the filth would either run into the *nala*, or else, when rain fell, would soak through the ground, or be carried over the surface, and thus find its way into a source of drinking water.

CHAPTER II.

Regarding Sources of Drinking Water.

All sources of drinking water made subject to the control of Panchayat.

11. All sources of drinking water, whether from tanks, wells, running streams, dry water-courses, reservoirs or cisterns, from which the villagers draw their drinking water-supply, are hereby placed under the control, management and jurisdiction of the Panchayat, and it is one of its most important duties to preserve the purity of the water in them, and to prevent in every way it can its contamination; and it shall bring in the manner hereafter provided all offenders against these rules before the village Patel for punishment; and in the event of any of the abovenamed sources being found to yield impure water, the Panchayat shall take immediate measures to improve the same, and shall either by beat of *battakee*, or by attaching a notice in the vernacular of the district in a conspicuous place near it, forbid the further use of such source, either temporarily or permanently.

Open tanks.

12. Experience has proved that the water in open tanks is always impure, because it is impossible to prevent dust, etc., being blown into the water, or men or animals from going into it, or the surface filth on the gathering ground from being washed into it, and therefore it is necessary to take immediate steps to improve such water, if the villagers are dependent on it as a source of drinking water. In every village, therefore, where the only source of drinking water is from a tank, or where the villagers use the water of any tank for drinking purposes, the Panchayat shall, as soon as possible after it is first appointed and within three months of such date, cause to be dug one or two or more wells on the sides of the tank, but at a distance of not less than 15 feet from its margin, so that the water from the tank in its passage to the well may become purified by filtration through that thickness of earth. It is also essential that the margin of the tank should be covered with grass. It would be better if it were paved, but this would be much too expensive in many villages, and grass can be grown in most villages around tanks.

Old wells.

13. The following directions of the Army Sanitary Commission regarding existing wells deserve great attention: "The ground about every well should be examined. If the ground is foul and filth-sodden, no well dug in it can yield good water. If in a house or compound there is a cess-pit, together with a well, both should be filled up. It may be taken for granted that the cess-pit has so fouled the subsoil that no good water can be got from it. When wells are the source of the water supply the safest course is to provide a new well. It should be dug in clean ground away from all nuisances."

New wells.

14. In digging new wells the following rules by the Army Sanitary Commission are *in all cases* to be strictly followed. "The well is dug and built up in the usual way, but when it comes within eight or ten feet of the surface the tube must be coated outside with puddle or cement to cut off the upper portion of the subsoil water. The tube of the well should be raised two feet above the ground-level and covered with a roof. The ground round the well should be coated with concrete, or paved and sloped away from the well to open channels to convey the wastage water to a distance." Instead of a wooden roof the top of the well may be domed over like the old Mahomedan wells at Bijapur, or as in some ancient Hindu wells, of which there is a fine specimen at Mhow. Openings should be left in the dome, through which, as recommended by the Army Sanitary Commission, the water can be drawn up by means of an iron bucket attached to an iron chain, and worked over a hand windlass. Iron chains and buckets are much cleaner than the ordinary mode of a rope and brass lota. In "Ads," and indeed around every well, old as well as new, a channel to convey away the wastage water to a distance *must* be made. It is also a good plan, as at Neriad, to fix iron bars across the tube, about two or three feet below the top, and to attach iron chains and foot-rests to the inner sides of the tube, so that persons who fall in accidentally may have the means of saving themselves.

Wells not to be below trees.

15. No well should be situated below a tree, as not only leaves but the droppings of birds and of animals, such as monkeys, squirrels, etc., fall into the water and render it impure. Birds also frequently build their nests in holes situated in the sides of a well, and of course the water is rendered impure by their droppings, feathers, etc., etc. If any existing well is below a tree, a cover must at once be put over it.

Step well prohibited.

16. It is expressly forbidden to construct any new well with steps leading down into the water, as it has been found that the practice of going down steps into the water, with naked feet and legs, exposes persons so doing to a very great risk of contracting Guinea worm. All existing step-wells should at once have the approach leading into the water bricked or walled across, and the well should be converted into a draw-well.

17. If the drinking water is obtained from a flowing river, it is the duty of the Panchayat to take efficient measures to preserve the cleanliness of the banks as well as the beds of all *nalas*, streams, or water-courses which discharge into it, and to prevent their contamination.

Flowing rivers.

18. If the villagers draw their drinking water from Jheels dug in the dry bed of a river, the Panchayat shall take especial precautions to protect it from defilement, and no one shall be permitted to resort to it for the purposes of nature, or to cultivate its bed, or to grow melons on it, or to manure its surface, especially above stream. The place where the Jheels are situated shall be enclosed by a thick bramble hedge or high ramps of sand, so as to prevent cattle from fouling the water. A separate place for watering the cattle shall be provided.

Jheels.

19. Tankas or cisterns for storing rain water under houses are dangerous, first because evaporation is constantly going on from the surface of the water, so that the residents live in a moist atmosphere; 2nd, because it is almost impossible to prevent filth from being washed into them from the roof; 3rd, because the mortar or cement used to plaster the sides cracks and gives way in places, and there is constant and great danger of soakage of impure matter into the water so stored from the subsoil outside; 4th, because both in old and new tankas rats and other vermin make their way to the water, often through drains, and impure gas finds its way into it. Their use should therefore be discouraged as much as possible, but until a plentiful supply of pure water is provided, they may be allowed; but they should be inspected by the servants of the Panchayat, and should be cemented inside once a year, and be cleaned out before the rains, and they should be covered with a cemented dome, through which a ventilating shaft should be carried up through the roof. They should not be covered by wooden rafters, which rot and are liable to be infested by insects.

Tankas or cisterns below houses.

20. It shall be the duty of the Panchayat, as soon after commencing work as possible, and certainly within one month afterwards, to allot for the use of the low-caste people attached to the village a separate source or sources of drinking water for their sole use, if they do not already possess one, and no deviation from this rule can be permitted. It must also be remembered if both Mahars and Mangs are attached to the village that a separate source must be allotted to each, as they will not drink water from each other's well.

Separate sources of drinking water to be allotted to the low castes.

21. The Panchayat shall also set apart, if possible, a tank, or such other place as may be most convenient for the use of the villagers for bathing, washing of clothes, and for watering cattle. If, however, there is only one tank in a village, then until new wells, as provided in Rule 12, are dug, the water for the purpose of ablution, washing of clothes, and the watering of cattle, should be raised by a Persian wheel, and distributed into troughs, which should be so placed that the waste-water from them cannot drain back into the tank, and every person who bathes, or washes clothes, or waters cattle in, or who defiles in any other way any tank not reserved for the purpose, shall be punished in the manner hereafter provided.

Places to be reserved for ablution purposes, washing of clothes, and watering of cattle.

CHAPTER III.

RULES TO PROVIDE FOR THE DAILY CLEANSING OF THE VILLAGE SITE AND FOR THE REMOVAL OF FILTH THEREFROM, AND INSTRUCTIONS HOW TO PREVENT SOME OF THE NUISANCES MOST COMMONLY MET WITH IN VILLAGES.

22. One of the principal duties of the Panchayat is to take effective measures to ensure the daily cleansing of the village site up to the boundary-marks, and to prevent nuisances being committed on it.

Village site up to boundary-marks to be daily cleaned.

23. To enable it to perform the first-named of these duties, the village menial servants are hereby placed under its command, and it shall be their duty daily to sweep the surface of the roads, lanes, thoroughfares throughout the village, etc., and to keep the surface not only inside, but on the outskirts of the village up to the boundary-marks, clean; to clean the surface of the compounds, back enclosures, yards, and at the sides and fronts of the houses; to collect and remove all filth of whatever description therefrom and convey it to the place appointed; to sweep out, flush, and remove all dirt, silt, etc., from the surface drainage channels, and, where they exist, from the roadside gutters; to empty cess-pools and remove their contents to the place appointed; to clean out and remove the night-soil from every privy in the village, whether public or private; to sweep up all night-soil which may have been passed by squatters in waste places, or on the sites of ruined houses, or on the thoroughfares, etc., in the village, and to convey it to the place appointed; to collect and remove all stable litter, dung, dry and liquid refuse, garbage, offal, etc., to the place appointed; to cut down all prickly pear wherever met within the boundary-marks, and to bury it under 3 feet of earth; to cut down and remove all rank vegetation, etc., and generally to perform such other acts as may be necessary for the maintenance of thorough cleanliness in the village.

Village menial servants placed under the command of the Panchayat and their duties.

24. For the performance of these duties, which will demand their full time, the menial servants, if hereditary, shall receive a money-payment over and above any emolument they derive from land or from grain given as "baluta." The amount of this money-payment, after deducting the estimated equivalent of the baluta, shall be settled on the basis of the ruling wage of a daily labourer in the district. It of course must vary. In districts where there are no hereditary menial servants, the amount of wages to be paid to each menial servant shall be calculated on the ruling wage of a daily labourer in the district. In all cases the scale of wages or of money-payment to be paid to each menial servant must receive the sanction of Government, who may either increase or decrease it, as seems to it to be proper and just to all the parties concerned.

Hereditary menial servants to receive a money-payment over and above baluta, and in districts where there are no hereditary menial servants, the scavengers are to be paid according to a scale sanctioned by Government.

25. The following rules enumerate some of the nuisances commonly met with in villages and which Government wishes to be stopped. The Panchayat should therefore inform the villagers to this effect, and point out to them that these Rules have been drawn up with the sole object of benefiting them and their families, and that the filth which is most dangerous to their health is the filth produced by themselves, and existing in the immediate vicinity of their houses.

Nuisances commonly met with in villages and which are to be stopped.

26. For example, it is too often the custom for the inhabitants to micturate on the ground alongside the walls of their houses, or along the sides of the roads, etc. Now urine contains substances which quickly putrefy, and, as it soaks into the subsoil, it renders it and the air breathed by the household impure.

Micturating in wrong places.

27. Then again, old persons of either sex, and even adult men and women as well as children, during the dark hours of the night or in the very early morning before it is yet light, ease themselves in the back-yards of

Defiling surface with night-soil.

their houses, or in the roads in front of houses, or on the site of fallen houses, or on waste places, or on any other convenient spot. The practice is most dangerous, and must be stopped, as it taints the air with dangerous emanations, and it fouls the soil with dangerous matter.

Liquid and solid household refuse.

28. Then again the liquid kitchen refuse frequently is conveyed through a closed pipe to a cess-pool situated close alongside the house in the back-yard, whilst all the solid household refuse, such as vegetable ends, the entrails of fish, or fowls, bones, leaves which have been used as dinner plates, currie, rice, etc., are usually thrown out on to the ground near the back door. All such and similar substances readily putrefy, and make the soil, subsoil, and atmosphere impure, and this foulness is intensified by the inhabitants performing their necessary ablutions generally whilst standing on a flat stone near the back door. This practice, besides fouling the water in wells, renders the subsoil very damp, and is a fertile source of fevers and other diseases.

Villagers to be warned that such acts are prohibited,

29. The Panchayat shall therefore at once take measures to prevent such nuisances being committed in the village, and it should notify to the villagers that Government positively forbids them—1st, to relieve nature either by micturition or by easing themselves in places such as are named above, where it would be of detriment to the public health to do so, or in any other place where such act is forbidden; 2nd, to deposit dirt of any description except in places or receptacles assigned for its reception.

Public urinals.

30. The Panchayat shall select and enclose suitable places for the use of each sex in different parts of the village, to which the villagers should retire for the purposes of micturition, and at which thick earthenware or iron vessels, which have been dammered inside and out should be placed, which must be emptied regularly every day by the village servants. The Panchayat may also permit villagers to keep a similar utensil on a bricked or paved surface in their compounds, which shall likewise be emptied every day. After public urinals have been provided in sufficient number for the size of the village, any person found micturating in any other place than a privy, proper utensil, or at a public urinal, shall be dealt with in the manner hereafter provided.

All villagers to visit places assigned for purposes of nature.

31. The Panchayat shall likewise make public proclamation that after a certain date all villagers must as a rule perform the offices of nature only at the place or places assigned for this purpose, outside the boundary-marks round the village; but circumstances may possibly arise when it may be desirable to allow the erection of public or private privies in the interior of the village, when the following regulations regarding privies shall be strictly enforced.

Pit-privies prohibited.

32. In the first place all pit-privies, which in Guzerat are called Datan privies or Khalkowas, are hereby strictly prohibited, as the ordure collected in them fouls the subsoil and water-bearing stratum, whilst the constant emanations given off by the decomposing night-soil seriously taints the atmosphere around houses; the Panchayat shall therefore give immediate notice to the owner of every pit privy existing in the village to have it filled in with clean earth, within six months after this Act comes into operation, and on no account and in no circumstances is permission to be given for a new pit-privy to be made.

Public better than private privies. Punch privies.

33. It is advisable not to have any privies at all in the compounds. Even the cleanest privy emits an offensive odour, and all such smells near a house are unwholesome. It would be safer if the Panchayat were to erect public privies on convenient sites for the use of villagers. If, however, several villagers are desirous of having private privies, permission may be given to them to erect groups of privies on convenient sites, on open places outside the compounds, but inside the village, the door of each compartment being provided with a key, so as to reserve it for the sole use of each family.

Regulations applicable to all privies.

34. If, however, circumstances arise where the Panchayat exceptionally permits the erection of private privies in the back-yard of the houses, the following regulations must be strictly observed.

Privies to be detached.

35. No privy shall be situated within the walls of a dwelling house, but it shall only be allowed to be erected in a building standing by itself, and separated from the house and any adjacent house, by an air space of at least three feet all round.

Site.

36. The site shall be selected with reference to its capability for the privy being cleaned by a *halalcore* without entering the compound. In no case shall a privy be situated in a verandah of a house, or open directly on to a public thoroughfare.

Construction of privies.

37. In the construction of a privy no lime or masonry shall be used, as when urine falls on lime, offensive ammoniacal salts are produced, and it is impossible to keep the place clean. The roof should slope towards the south-west but be open towards the north-east and at the sides. It should be supported by four wooden uprights, the two at the rear being one-and-a-half or two feet higher than the two in the front, which should be let into the ground after the bottom ends have been well dammered. There should be two foot-rests, 3 feet cube, consisting, if possible, of stone, but if that is not procurable, of bricks covered with dammer. In the centre an iron receptacle, similar in pattern to the one sanctioned by the Government of Bombay for a native privy, should be placed, which should stand if possible on a paved, bricked, asphalted, or at least dammered surface. The receptacle consists of two chambers, the upper one of which retains the night-soil, and is perforated to allow of the ablution-water and urine flowing into the lower chamber.

Baskets.

38. Baskets are not to be used as receptacles for night-soil in privies, and are only allowed in exceptional circumstances, when they should be cow-dunged inside and out, so as to become waterright. They may, however, be required to be brought into a house for the use of children who are too young to go to the appointed place, or for persons who are sick or too feeble to walk the distance, or for *purdanashin* women. If used they must be kept on a paved or bricked surface in the back-yard, and the ashes from the chulas must be thrown over the night-soil, which must be removed every day to the appointed place.

Rules for cess-pools.

39. Besides the above Rules regarding privies, the Panchayat shall cause the following instructions regarding cess-pools to be rigidly adhered to:—

Danger of cess-pools.

40. Cess-pools at present are frequently built just outside the walls of a house in the back-yard, and are frequently connected with a *nani* or *mori* inside the house on the ground-floor, or if it is an upper-storied building, with the *nani* on each floor, by means of closed pipes. This practice is most dangerous to health, as all

the foul air from the decomposing matter in the cess-pool is drawn up into the rooms by the warmer air of the apartments, where it is breathed by the inmates. The Panchayat should therefore take immediate measures to substitute for the closed pipe an open channel, so as to allow the foul air to escape at once into the external air. The down-take channels should not discharge direct into the cess-pool, but should terminate a foot above an open gutter situated at least two feet on one side of the cess-pool, and opening direct into it.

Cess-pools should be open; if closed, to be ventilated.

41. All cess-pools should be open at the top, but if from unavoidable circumstances of position the Panchayat, in exceptional and rare instances, permits a cess-pool to be covered, a large ventilating pipe of not less than 4 inches in diameter should be carried from the top of the cess-pool up the sides of the house, or, if the roof is a sloping one, in a vertical direction so as to terminate not less than ten feet above the line of roof. The utmost care must be taken that the pipe does not end below the windows of an adjacent house.

Cess-pools must be daily cleansed and properly cemented inside.

42. All cess-pools, including those that are covered, must be cleaned out daily, and the Panchayat should be careful to see that they are properly cemented on the inside so that no soakage into the subsoil can take place. They should also not allow cess-pools to be constructed close to the foundations of a house, to which, if possible, they should not be nearer than ten feet.

All cess-pools to be filled in as soon as there are surface drains.

43. But in every village the Panchayat shall at once take measures to provide surface drains for the purpose of carrying off the storm-water and keeping the village site as dry as possible. When these have been provided the Panchayat shall cause each house to be connected with a surface drain, for the purpose of carrying off the liquid refuse, and the bathing water, and when this has been done, shall cause all cess-pools to be filled in with fresh earth at the expense of the owner.

Surface-drains.

44. The surface-drains shall consist of open shallow watertight channels, either placed by the side of a footpath, or, if there is no footpath, by the side of the road. The rubble masonry roadside gutters, as usually seen, are very dangerous, as they follow the inequalities of the house fronts, and invariably keep the foundations of the adjacent houses very damp. Surface-drains should always be laid in straight lines, with a gentle bend at each change of direction. The instructions of the Army Sanitary Commission regarding them are as follows :— "The materials should be the best and cheapest to be obtained on the spot. Cut-stone, or concrete, or asphalt might be used, or masonry or close-fitting vitrified bricks, but in any case it is absolutely necessary that the channel itself be laid true, have a sufficient fall, and that all the joints should be watertight. Open cuts in the earth are of no use, but are on the contrary to be avoided, as leading to a damp unwholesome state of the subsoil. Shallow saucer sectional surface-drains can be kept clean by sweeping or by throwing water into them. With due care in cleansing with fresh water there would be no risk in allowing water used by households for washing and bathing to run into the surface-drains. The surface-drains should discharge their contents into open impervious shallow surface sewers, by which the water could be conveyed to a distance from the village, and used at once for irrigating land, and so be finally disposed of."

Obstruction in and over drains prohibited.

45. The Panchayat shall take especial care to prevent the flow of water in the surface-drains being intercepted by house-owners placing any articles in them, and it shall not be lawful to cover over a drain, or to place anything over it, except, if access is required to a house, a plank not more than 18 inches in width may be placed across such drain.

Sholapur system may be exceptionally tried.

46. If open drains are not found to answer, or in thoroughfares where there is much wheeled traffic, the Panchayat may adopt a system of partially closed drains, laid under the surface of the roads, so successfully introduced in parts of the town at Sholapur, which are described in the Inspection Report for 1887 on that city.

Bathing places.

47. All places in the back-yards, where the residents usually bathe, must be paved or covered with concrete, and be connected with a surface-drain, but if situated inside the house, the water from them should flow out through an open, and not through a closed, channel on to a paved or concrete surface, communicating with a surface-drain.

Solid refuse.

48. The solid household refuse should be carried out of the houses and be deposited in dustbins to be erected by the Panchayat on convenient sites outside, but near, the houses in every street, etc., throughout the village, but if in exceptional circumstances the Panchayat permits it to be deposited within the compounds, it must be placed in an iron receptacle, or deposited on a paved or bricked surface in the back-yard, not less than four feet square. It must not be thrown out on to the bare ground. It must be daily removed from the dustbins and receptacles by the village servants.

Dead animals.

49. The carcases of all animals which die in the village shall be removed at the expense of the owner by the village servants to the place set apart for the disposal of carcases, and be there buried under six feet of earth. The flesh shall in no circumstances be eaten by Mahars or other low-caste people.

The storage of night-soil and dung near houses prohibited.

50. It shall not be lawful to store night-soil near human habitations, or anywhere within the boundary-marks, nor shall it be lawful to keep the dung of cattle in stacks near houses. Any person contravening this rule shall be dealt with in the manner hereafter provided. Of course cow-dung cakes to be used as fuel may be kept inside houses, but it shall not be lawful to spread wet cow-dung over the ground or to affix it to walls inside compounds. Cow-dung cakes should be manufactured outside the village boundary-marks.

Paving of streets, etc.

51. It is very desirable that where stone is procurable the surface of the streets and thoroughfares should be paved, and that where it is not procurable their surface be raised in the centre and be well rammed, so that water will not lie on them but run easily off to a drain.

The residences of low-caste people to be frequently inspected by the Panchayat.

52. It shall be one of the most important duties of the Panchayat to visit at frequent intervals, and not less often than twice a week, the Mahar or Mang Vada attached to the village. The greatest care is to be taken that these places are kept scrupulously clean, that the wate-rsupply is good and sufficient, and that places of natural resort are allotted for the use of low caste residents. The provisions of the Rules are to be as strictly applied to these places as to houses and compounds inside the village, for if disease springs up among the low-caste people, it is sure to spread to the village.

CHAPTER IV.

THE FOLLOWING RULES PROVIDE ESPECIALLY FOR THE IMPROVEMENT OF THE INTERIOR OF HOUSES AND COMPOUNDS, AND THEIR OBJECT IS TO INSURE PURE AIR BEING BREATHED BY THE VILLAGERS, AND TO GUARD THEM AND THEIR CHILDREN AGAINST ILLNESS.

53. Every house in the village shall be lime-washed inside and out twice a year, as hot lime-wash destroys much hurtful matter which clings to, and accumulates on, the surface of the walls.

Lime-washing.

54. The ground-floor of houses should not be leeped with cow dung. If it must be leeped at all, clay should be used for this purpose, but in the event of no clay being procurable in the village, fresh and clean earth, or kunkur, should be spread over the floor and be well rammed, so as to form a hard compact surface. This should be renewed at intervals, say, of every six months.

Leeping floors.

55. A very frequent cause of ill-health is the custom of sleeping on the bare floor, which, although it may appear on the surface to be quite dry, yet, when opened up for a few inches, is frequently found to be damp. It is very necessary for health that each person should sleep on a cot, or charpai, or even on a net stretched across the room. The great object is to raise the body even for a few inches above the floor. This would be found to be a great protection against contracting fever by sleeping on damp ground. If the legs and joints of the charpai are dipped in kerosine oil, all insects, such as bugs, will keep away from it.

Danger of sleeping on bare floor.

56. Every room in a house should be provided with means of communication with the external air other than by the door. If the house consists of only a ground-floor, an opening 3′ by 3′ should be made in the roof, which should over it be raised for a height of not less than 9 inches, so that, whilst the rain is excluded, the foul air and smoke will escape into the external air.

Ventilation of ground floor houses.

57. If the house is upper-storied, openings at least 3′ long and 1′ broad should be made in the external wall in each room on the lower floors, on a line with the ceiling or rafters of the upper room. If one of the walls of these rooms is a party-wall, no opening should be made in it, but only in the external wall.

Ventilation in upper storied houses.

58. It would be better if these openings were converted into windows. It is easy to knock a hole in the wall and to insert a window-frame, say 3′ by 2½′. A window of these dimensions would afford good means of ventilation, and add immensely to the purity of the air, and would thereby improve the health of the inmates, especially of the children.

Windows.

59. In some houses, in order to economize space, it is common to find a wooden staging which extends perhaps more than half-way up the wall, on which fowls roost, and firewood, cowdung cakes, odds and ends, are kept. This practice seriously interferes with the cubic space of the room, and consequently with the amount of air in it, which ought to be kept for respiration by the inmates. The Panchayat should therefore especially warn the villagers of the danger caused by these lofts.

Cubic space of rooms not to be encroached upon.

60. No fowls or animals, such as goats, sheep, horses, ponies, mules, donkeys, cows, buffaloes, etc., should be allowed to be kept in the interior of houses, as by so doing the air which the inmates breathe is rendered very impure, not only by the droppings of the animals, whose urine also soaks into the floor and finds its way into wells, but also because they abstract a very large quantity of the air which ought to be used by the household, and it is very well known that air is rendered very impure by the respiration of animals.

No fowls or animals to be kept inside houses.

61. In all cases such animals must be kept in a stable outside the house. It is very desirable that arrangements should be made to stall all cattle in a field outside the village, but if that cannot be done, and they must be kept for safety inside the village, they should be stalled in a stable erected on some open ground.

All animals must be kept in a stable outside the house.

62. The floors of all stables shall consist of well-rammed earth or clay, and until the stable is connected with a surface-drain, provision should be made to catch the urine passed by the animals in gurras, and to convey it to the appointed place.

Floors of stables.

63. The stable litter and dung, if required for agricultural purposes, must be periodically, and not less often than twice a week, removed to the fields. The surface of the ground on which it is deposited in the stable-yards should be paved or bricked, and it should be drained.

Litter to be removed frequently.

CHAPTER V.

GENERAL REGULATIONS FOR THE PROMOTION OF CLEANLINESS AND OTHER MEASURES NECESSARY FOR THE WELL-BEING OF THE VILLAGE.

64. The Panchayat shall take measures to compel the owners of all ruined or fallen houses to level the site and to keep the surface clean and free from rank vegetation and filth, and shall order it to be forthwith enclosed, either by a sufficient wall, or fence, so as to prevent its being used as a place of natural resort; and any owner failing to comply with the orders of the Panchayat shall be dealt with in the manner hereafter provided.

Fallen houses.

65. All low brushwood, jungle or rank vegetation, growing inside or on the outskirts of a village, shall be cut down and removed by the village menial servants, and all prickly pear, whether growing inside or on the outskirts of a village, shall be cut down and immediately buried under three feet of earth. It is no good to burn it—it must be *buried* under three feet of earth. It is necessary to eradicate this noxious plant, because it not only grows to such a height as to frequently interfere with the perflation of the village, but it also affords a convenient shelter for persons to frequent as a place of natural resort, whilst it permits all kinds of filth to collect below it, where it putrifies, and is difficult to dislodge, and then when the rains set in, is liable to be washed into a source of drinking water.

Rank vegetation and prickly pear.

66. The lower branches of trees should be lopped, so as to improve the external ventilation, and trees should be planted on wet and damp ground near a village, so as to dry the ground and purify the air.

Trees.

67. No new excavations are, on any account, to be permitted in or near a village, and all existing ones must either be filled in or drained. If the villagers want earth to make mud for building purposes, they must excavate it beyond the boundary-marks. When stagnant water begins to dry up, the exposed mud becomes a fruitful source of fever; all marshy ground therefore near a village should be drained.

Excavations, etc.

68. The Panchayat shall regulate the height of wood-stacks in the village, and not allow any stacks to be so high as to interfere with the perflation and ventilation of adjoining houses.

Wood stacks.

69. No pigs shall be allowed to wander about the village or its outskirts, and their owners shall be compelled to keep them in proper styes, which shall be so situated and be so kept as not to cause a nuisance.

Pigs.

70. No slaughter-house of any description shall be allowed inside the village, and no animals, except as hereafter permitted, shall be slaughtered in it, or anywhere except in a slaughter-house licensed by, or belonging to, the Panchayat. On the occasion, however, of religious ceremonies, the Panchayat may permit sheep or goats to be slaughtered as sacrifices, on payment of a fee of one rupee per animal; but in all cases ashes must previously be spread thickly over the place where the animal is to be slaughtered, and ashes shall also be poured over the blood, so as to prevent its soaking into the ground, which must afterwards be swept and well sluiced with water so as to clean it.

Slaughter-houses.

71. All offensive trades such as tanneries, potteries, tile-burning, lime-burning, indigo-dyeing, wool-sorting and cleaning, catgut-making, cow-dung manufactories, and the like, shall be permitted only when their owners have received a license from the Panchayat. These trades shall be removed from the interior of the village, and not be allowed to be established on any site nearer than a quarter of a mile, and only on the south of it. The Panchayat shall frequently inspect such places and not permit any heap of offensive refuse to be kept, and they shall see that the premises are kept clean and are drained.

Offensive trades.

72. It is very desirable that there should, if possible, be a public market, and wealthy villagers could not give their fellow-villagers a greater boon than a good public market, which could be called after their names, but, until one has been provided, the shops in which articles of food are exposed for sale should be frequently inspected by the Panchayat, and if any article of food is unfit for human consumption, it shall be confiscated and the vendor shall be dealt with in the manner hereinafter provided. Great care must be taken to prevent the sale of, and to destroy all, under-ripe or over-ripe fruit which is offered for sale, especially when cholera is about.

Food-supplies to be frequently inspected by the Panchayat.

73. The mixing of water with milk, or the mixing of any foreign substance with *ghi*, is prohibited, and any person who offers or exposes for sale such adulterated milk or *ghi* shall be dealt with in the manner hereinafter provided.

Adulteration of milk or *ghi*.

74. *Suniasis* shall not be buried and the bodies of other Hindus shall not be burnt above stream, or in the bed or on the bank of any river, water-course, or tank from which drinking-water is drawn, or anywhere except on such sites as may be selected by the Panchayat and approved of by Government; in all cases the burning ghâts shall be below the site from which drinking-water is drawn.

Burning ghâts.

75. No burial-ground shall be allowed inside a village, or on the banks or sides of tanks, or on the gathering ground of any tank from which the villagers draw their drinking-water; all such at present existing shall be closed when new ones are provided, and when the order of Government has been received to that effect, and no new burial-ground shall be nearer than 450 yards to the village.

Burial-grounds.

76. All graves, where the depth of soil will admit of it, shall not be less than six feet, and in no circumstances shall the depth of a grave be less than four feet.

Graves.

77. It shall also be the duty of the Panchayat to frequently inspect all *Dhurmsalas* in or near a village, and to see that they are properly lime-washed, and that they and their environments are drained and are kept perfectly clean, and are provided with sufficient privy accommodation.

Dhurmsalas.

CHAPTER VI.

Further Duties of the Panchayat and Instructions for use in Outbreaks of Cholera.

78. Immediately after the Panchayat is first appointed, the Chairman shall divide the village into as many wards as there are members of the Panchayat, and shall appoint each member to the charge of a particular ward. It must ever be remembered that the members of the Panchayat are appointed to exercise constant and strict supervision over the sanitary state of the village. Each member must therefore take individual interest in the ward entrusted to him, and shall see that cleanliness is strictly maintained in it, and that the provisions of these Rules are strictly enforced in it, and the inhabitants of each ward should be encouraged to inform their representative on the Panchayat of all such sanitary defects as come to their notice.

Village to be divided into wards and a member of Panchayat appointed to take charge of each.

79. In furtherance also of the objects of these Rules the Panchayat shall have power to maintain a sufficient establishment of carts, servants' baskets, brooms, and such other appurtenances as may be necessary to carry out the purposes of this Act. It shall not be lawful for it to delegate the duty of cleansing the village to any contractor, but it shall, through the village servants, take adequate measures for cleansing the village, and such other action as is referred to in these Rules.

Duties of Panchayat, etc., not to be delegated.

80. The Panchayat shall also give every assistance to the Taluka Vaccinator, whenever he visits a village, by collecting all unprotected children for him to vaccinate; and it shall also from time to time warn the villagers that every child born in the village since the vaccinator's last visit, or who is unprotected, must be brought to him to be vaccinated, on the first occasion on which he subsequently visits the village.

Vaccination.

81. It will also be the duty of the Panchayat to take measures, in concert with the Patel, to ensure a correct registration of every birth and death which occurs in the village, and it should frequently warn the villagers, by beat of *battaki*, that whenever a birth or death occurs in their house, the headman of the family is bound by law to report the occurrence to the Kulkurni or Telati, or in their absence to the Patel, within 24 hours after such occurrence, so that it may be duly entered in the Village Register. The village bhungies should likewise be instructed to give notice to the Patel, immediately on its coming to their knowledge that a birth or death has taken place in any family.

Registration of births and deaths.

82. The Panchayat shall also assist the Patel in keeping a correct register of deaths from small-pox, or cholera, and shall bring such deaths immediately to his notice.

Register of small-pox and cholera.

83. The Panchayat shall also at once make a register of all blind, deaf and dumb persons, and of all persons affected with either black or white leprosy, living in the village, which shall be kept in readiness for the inspection of Officers of Government. They should not allow persons affected with black leprosy to live in the same house with the healthy, but should provide proper shelter for them outside the village.

The blind, deaf, and dumb, and all lepers to be registered.

84. The Panchayat should also keep a register of all offensive trades, liquor and opium shops, burning ghâts, burial-grounds, and take measures at frequent intervals to test its correctness.

Offensive trades, liquor and opium shops, burning ghâts, burial-grounds, to be registered.

85. As soon after it is appointed as possible, the Panchayat shall provide a stock of cholera mixture, and cholera pills, to be kept ready for emergencies, and when cholera is prevalent in the adjacent villages, great care must be taken to see that the provisions of these rules are most strictly carried out, and that the most perfect cleanliness of surface is everywhere maintained in the village, and that the purity of the drinking-water is above suspicion. The villagers are to be warned that outbreaks of cholera are generally preceded by a period in which diarrhœa becomes prevalent and that therefore any villager who has occasion to go to the rear more frequently than usual—even once more often—should forthwith, at any hour, even in the middle of the night, apply to the Patel for medicine to check the diarrhœa, which at that time is easily curable, but which, if neglected, even for a very short time, will probably develop into cholera. This is most extremely important, and the Panchayat should so instruct the villagers in every way they can.

Cholera; action before outbreak.

86. If cholera actually invades the village, it is not advisable at that time to disturb deposits of filth. There should be none such in the village; but if in spite of these Rules there are deposits of filth found, the best thing to do is to cover them with at least six inches of fresh and clean earth, and to maintain the utmost cleanliness in the village. The presence of cholera ought to make no difference in cleaning; for the best preventive is to maintain the most scrupulous cleanliness at all times and seasons, independent of such times as cholera is in movement. As an extra precaution, however, watchmen should be placed to prevent any possible contamination of the sources of the drinking water, and the villagers should be told to boil all their drinking water.

Action during outbreak.

87. The Panchayat should also warn the people to abstain from drinking spirits, as the practice of drinking spirits is believed to pre-dispose the person taking them, and to render him more liable to catch the disease.

Spirits to be avoided as deadly.

88. When cholera appears in a village it is most important to tell the people that the disease is not contagious, and that therefore there is no danger in attending the sick; but it is especially necessary to recollect that cholera evidently attaches itself to *particular localities*. The principle to be borne in mind therefore is that the particular locality in which cholera shows itself must be looked upon as dangerous. If possible, the patient should leave the house and be moved away to a shed or open place situated outside the village, quite away from the place where he was attacked.

Cholera not contagious, but attaches itself to particular localities.

89. The Panchayat should therefore have prepared before the outbreak, on the outskirts of the village but not near any of the filth-sites, a grass hut or huts, to which temporary shelter persons who leave their houses on account of cholera can go. Water, provisions, medicine, and attendance should, of course, be provided for such persons.

Grass huts to be erected on the outskirts of village.

90. As plenty of fresh air greatly assists the chances of recovery, the friends and relations should not crowd round the person attacked, but only one, or at the most, two people should remain with him.

Fresh air necessary for patient.

91. The patient should, if possible, lie on a cot, and not on the ground. He should be fanned, and one man should shampoo his arms and legs if he has cramps. Water which has been boiled and allowed to becoome cold may from time to time be given him to drink. He should be given the cholera medicine according to the directions; but if the surface of the body is icy cold, if the lips are blue, if the eyes appear glazed, it is no good giving him medicine, but he should be well shampooed and the surface of the body should be well rubbed with the palms of the hands, and bottles containing hot water should be applied to the extremities. If he can swallow, he should be given hot mutton broth at frequent intervals. If his caste will not allow him to eat this, he should be given hot arrowroot conjee. It is very important to have the doors and windows, if any, left wide open. Never mind if he feels cold, fresh air is absolutely important, and he can be covered with warm clothes, etc., but at all hazards give him plenty of fresh air, and do not let more than two people be in the same room with him.

Treatment of patient.

92. It is all important to have the following rule most strictly carried out. The particular poison of cholera is supposed to be contained in the stools and vomited matter passed by the patient. It is therefore absolutely necessary that they be received in an old chatty or other receptacle, so that they should not be spilt on the floor or bedding, and as soon as they are passed, they should be burnt by igniting a little straw and dammer over them, and the ashes should be at once carried out of the village to the appointed place, and be there buried under at least a foot of earth. It must not be expected that the stools will consist of solid fæcal matter; they will be more like rice conjee water, and you must not say it is only water, and therefore throw it anywhere. The stool, which is like rice conjee water is the most dangerous of all, therefore these directions must be most implicitly obeyed. Particular care must be taken on no account to bury the stools or vomit near any well, water or tank, or to throw them out into the back-yard or into a privy; but as soon as the stool is passed, it must be *burnt* and the ashes be carried out of the village *at once*. On no account should the vessel containing these discharges be put down in the house or in the back-yard with the intention of removing them an hour or two hence; such a proceeding is *very dangerous*, for the stools, when first passed, are *not dangerous*, but they *very rapidly*, after a very short interval, become intensely poisonous. The only safe course is to remove them clean away *as soon as* they are passed. If the patient passes any of these stools on his bedding, no matter what the value of the article may be, should be at once burnt.

The stools and vomit must be immediately burnt and carried out of village.

Body to be disposed of at once.

93. If the patient dies, the body should be at once burnt, or buried in the clothes in which he died; they should not be taken off the body or sold.

Disinfection.

94. If a second case occurs in the same house, all the inmates should be turned out, and after the recovery or death of the patient, one pound of sulphur should be burnt in a pipkin in the room which he occupied. Whilst the process of disinfection is going on, the doors, windows, or other openings should be closed and kept closed for four hours, after which they should be opened. The floor should be dug up and the earth taken outside the village boundary and buried. The walls should be lime-washed and a portion of the tiles be removed from the roof; or, if it is a mud roof an opening should be made in it, so as to allow plenty of *light* and *air* to enter, and the inmates should not be allowed to return to the house for at least ten days.

Cleanliness is the surest preventive of cholera.

95. If the Panchayat take these simple precautions and follow out these instructions, many lives will be saved, but much will depend on whether they are strictly observed. The villagers at times when there is no cholera, should be warned that the surest preventive of cholera and other diseases is to have clean air, clean soil, clean food, clean water, clean houses, and clean persons.

If the above Rules are accepted, as calculated to give effect to the suggestions of the Government of India, and as being really necessary, as I maintain they are, to prevent disease and to improve the sanitary condition of the villages, it will be allowed, on all sides, that Government must provide the agency to see that the Panchayats really do their duty and carry out the orders of the Sanitary Boards. The work of organizing the cleansing establishments in the villages, and after this has been carried out, of seeing that they really are effective, must be continuous, and will be very onerous. The Panchayat will at first require much assistance. Places of natural resort, etc., must be selected by competent authority in each village, and it will require much labour, in the first place, to arrange, and afterwards to maintain, everything in smooth working order. The work of supervision on behalf of the Sanitary Board cannot be slurred over. It will not be sufficient to walk or ride through the streets of a village. Supervision of the condition of the *backyards, gullies, privies*, etc., is what is required and must, if any good is to follow, be conscientiously performed. It is therefore manifest to those who know what this really means, that there must be a distinct and separate agency provided for this duty. It would be, as the Government of India points out in the Resolution quoted above, physically impossible for an already overworked Collector and his Assistants, even if they had sufficient knowledge of the requirements of sanitation, to undertake this work in addition to the multifarious duties they already perform—whilst the hardworked Mamlutdar could not possibly do it, as in the first place he does not possess the requisite knowledge, and in the next, he could not devote even a fraction of his time to this duty; nor is it difficult to understand this, when it is remembered that the number of villages in a taluka sometimes amounts to 200 or 250, so that it is perfectly clear, if the Act is to be worked successfully, there must necessarily be a separate and distinct staff of officials, who must devote their whole time to this work.

I would therefore urge, as strongly as I can, that this opportunity should be taken to re-organize the Sanitary Department, and to entrust to its officers the organization and superintendence of the cleansing establishments in the villages, by constituting them the sanitary advisers of the Panchayats, and by appointing them the agents on behalf of the Sanitary Board to see that the Panchayats really carry out the Village Rules. If this were done, the Departmant, working under the orders of the Sanitary Board, would become a real *vis viva*, and would acquire inherent power to do good.

This is really a crying want, as at present the Officers of the Sanitary Department, except as regards vaccination, have no executive duties to perform. They can only give advise, which I regret to say is hardly ever followed; whilst they are so few in number, that it is absolutely ludicrous to suppose that they can maintain an effective supervision over the sanitary condition of their distiricts. Take the Presidency of Bombay for example, the population in which amounts to 16,454,414 persons, whilst its area comprises 124,130 square miles, or a larger area than that of Great Britain and Ireland combined. It is divided for the purposes of vaccination and the registration of vital statistics into districts, over each of which a Deputy Sanitary Commissioner presides. The following statement shows the number of Collectorates, villages, and vaccinators under the superintendence of each Deputy Sanitary Commissioner.

Number.	Registration Districts.	NUMBER.		
		Collectorates.	Villages.	Vaccinators.
1	Western	4	7,379	71
2	Central	5	5,856	93
3	Southern	4	4,600	98
4	Eastern Guzerat	5	3,290	79
5	Sind	5	3,410	66

No. 1 District covers an area of 26,320 square miles and has a population of 3,493,821 persons. In other words the area equals more than half the area of England, and the population exceeds that of Scotland by about 42,000 persons. No. 2 covers an area of 30,252 square miles, which is about equal to that of Scotland (30,401). The population amounts to 4,858,709 persons, or nearly the same population as in Ireland. No. 3 has a population of 4,132,186 persons living on an area of 24,390 square miles. No. 4 covers 27,712 square miles, and has a population of 4,102,314 persons. No. 5 comprises an area of 48,014 square miles, on which there lives a population of 2,413,823 persons.

I would ask any thinking man whether it is physically possible for 5 Deputy Sanitary Commissioners to travel over such vast areas and to efficiently superintend, not only the sanitary condition of the towns and villages in them, but also to inspect, as efficiency demands, the work of each individual vaccinator in each taluka and town of each Collectorate in their district. It surely must be conceded that it is simply a matter of impossibility for them, able and zealous as they are, to do this, and the strongest necessity exists for strengthening the Sanitary Department, and for entrusting it with executive functions.

The first thing to do, in my most mature opinion, is to reduce the area of supervision to one of reasonable and practical dimensions, and I am convinced that this ought not to exceed the area of each Collectorate; and I therefore regard it as absolutely essential that there should be a Health Officer for each Collectorate. It would be impossible, on account of the very heavy expense it would entail, to recommend that these Health Officers should be European Commissioned Officers. I therefore suggest that they be selected from that very valuable class of

public servants, the Assistant Surgeons, who should have under their orders a staff of Native Inspectors who have received a certificate of competency, with respect to their acquaintance with the details of practical sanitation, and who should draw fair pay to keep them out of temptation. These men should be solely and constantly employed in seeing that the cleansing establishments in the villages did their duty. Lest it should be proposed that the present staff of taluka vaccinators should act as these Sanitary Inspectors, I think it well at once to state that any such proposal is impractical and would not work, as the vaccinators already have more work to do than they can properly perform; nor have they time to go through the villages, as they have to pay two visits to each village in eight days, and they do not visit it again probably for a year, so that they could not possibly perform this additional work. The Health Officers would not only see that the Panchayats did their duty as regards water-supply, drainage, and conservancy in every village in their Collectorate, but they would also inspect all dispensaries therein, whereby they would become acquainted with the incidence and movement of disease. The vaccinaton establishments employed in each taluka, town, and cantonment in the Zilla would be placed under their orders, and they would compile in their head-quarter office the vital statistics received from each village and town in the Collectorate, and would at once bring to notice the outbreak of any epidemic disease and take immediate steps to prevent its spreading.

In order to supervise the work of the Health Officers it would be necessary to appoint European Medical Officers, designated Deputy Sanitary Commissioners, who would be constantly travelling throughout their divisions, which might correspond in area to those of the Revenue Commissioners. Whilst at the head of the Sanitary Department, thus organized, would be the Sanitary Commissioner, who, as now, would be the sanitary adviser to Government in the Military, as well as in the Civil Departments, and who himself would take charge of the larger Municipalities, and who would also be constantly travelling to inspect the work of the officers subordinate to him, and who would thus be in a position, through his establishment, to give effect to the orders of the Sanitary Board.

The Sanitary Department, re-organized in the manner I advocate, would be concrete and compact, and a potent engine for good, and if the working of a practical Village Sanitation Act is entrusted to its officers, as a matter of the utmost certainty cholera would at once lose its intensity, and eventually become eradicated—whilst other indigenous fevers, small-pox, etc., would assume a much milder type, and a healthy rural population would grow up, the labour market would be much more amply supplied, an increased area of land would be brought under cultivation, and the revenue of the country would be augmented, whilst England would cease to be, as now, stigmatized by foreign Nations, as being entirely indifferent to the just demands of the civilized world and to the real welfare of the 200 millions of natives of India committed to its charge, among whom such a terrible mortality is now permitted year after year to take place, without any measures being taken by Government to prevent it.

T. G. HEWLETT,
Deputy Surgeon General (Retired),
Late Sanitary Commissioner for the Government of Bombay.

3, Dynevor Road, Bedford.
12th September, 1889.

G. I. C. P. O.—No. 332 H. D.—23-11-96—500.—S. M. W.

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